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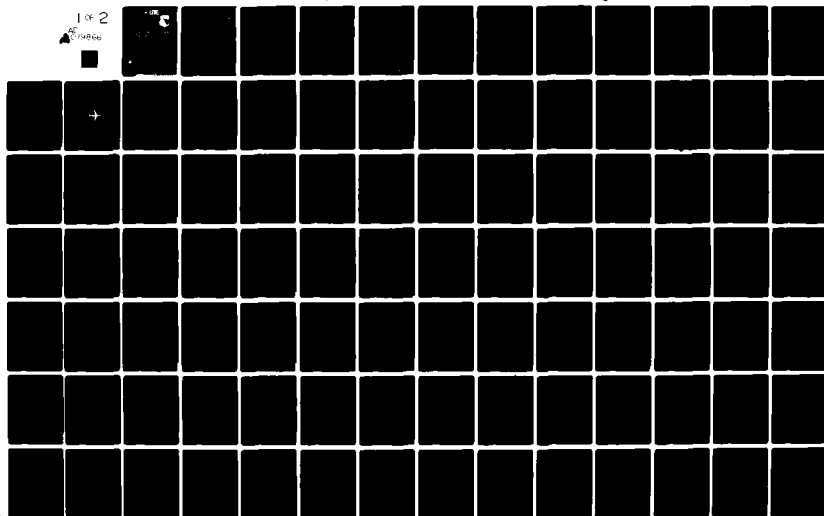
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LEVEL III

AMRL-75-50
Volume 120



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USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK
Volume 120
C-5A Aircraft, Near and Far-Field Noise

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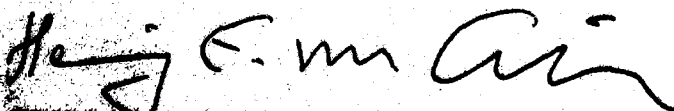
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This technical report has been reviewed and is approved for publication.

FOR THE COMMANDER



HEINRICH E. VON GIERKE

Director

Biodynamics and Bioengineering Division
Aerospace Medical Research Laboratory

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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number) → The USAF C-5A is a global, strategic airlift aircraft powered by four TF39-GE-1 turbofan engines. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runway pad for five engine/power configurations. Near-field data are reported for forty-five locations in a wide variety of physical and psychoacoustic measures: overall and band sound levels, preferred speech | | | |

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interference level, perceived noise level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

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PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723107, Technology to Define and Access Environmental Quality of Noise From AF Operations and Project/Task 723108, Crew Safety in Operational Noise Environments.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Mr. Harald Hille for his assistance in acquiring the raw data, Mr. Henry Mohlman, Mr. Keith Kettler and Mr. Fred Lampley of the University of Dayton for assistance in the mechanics of data processing and Mrs. Peggy Massie for assistance in typing and preparation of the graphics.

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INTRODUCTION

The USAF C-5A is a global, strategic airlift aircraft powered by four TF39-GE-1 turbofan engines. The aircraft was manufactured by the Lockheed Aircraft Corporation and the engines by the General Electric Company.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the C-5A aircraft.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15 C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2 (references 1 and 2) for such information because it is not repeated in other handbook volumes.*

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975
2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975

NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the C-5A aircraft during ground runup operations of its turbofan engines. For these tests, the aircraft was located on concrete parking aprons at Wright-Patterson AFB, Altus AFB and Edwards AFB with no significant reflecting surface in the vicinity except the ground plane. Table 1 lists the ground crew locations and gives the engine power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all of the noise samples on magnetic tape. During analysis of each sample, he determined the root-mean square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location.

Figure 1 shows the forty-five numbered near-field locations where ground crews are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations in the near-field are difficult since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test conditions A.

RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the C-5A aircraft at the forty-five ground crew locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measures given in Table 3 which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are for the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

TABLE 1
MEASUREMENT LOCATIONS AND TEST CONDITIONS
FOR NEAR-FIELD NOISE MEASUREMENTS

C-5A Aircraft, Ground Runup
Edwards AFB, 6 September 1969, Tail #690002
Wright-Patterson AFB, 27 April 1970, Tail #690005
Altus AFB, 14 June 1978, Tail #690025

Ground Crew Location

| | |
|----|---|
| 1 | Engine #1 Start |
| 2 | Engine #2 Start |
| 3 | Engine #2 and 4 Start |
| 4 | Scanner Area |
| 5 | NLG, Wheel Well, Forward Part |
| 6 | NLG, Wheel Well, Aft Part |
| 7 | Chock Removal, Forward MLG, Forward Tires |
| 8 | Chock Removal, Forward MLG, Aft Tires |
| 9 | Chock Removal, Aft MLG, Forward Tires |
| 10 | Chock Removal, Aft MLG, Aft Tires |
| 11 | Wing Walker |
| 12 | Engine Trim |
| 13 | APU Troubleshoot |
| 14 | APU Leak Test |
| 15 | Marshal/Telephone Talker |
| 16 | PTU Leak Test |
| 17 | SPR Refueling Receptacles |
| 18 | Hydraulic Leak Test, Forward MLG Pod, Forward End |
| 19 | Hydraulic Leak Test, Forward MLG Pod, Aft End |
| 20 | Hydraulic Leak Test, Aft MLG Pod, Forward End |
| 21 | Hydraulic Leak Test, Aft MLG Pod, Aft End |
| 22 | Ladder |
| 23 | Engine Observation |
| 24 | Hydraulic Leak Check |
| 25 | APU/ATM Noise At 20 Ft. Radius, 10° |
| 26 | APU/ATM Noise At 20 Ft. Radius, 30° |
| 27 | APU/ATM Noise At 20 Ft. Radius, 60° |
| 28 | APU/ATM Noise At 20 Ft. Radius, 90° |
| 29 | APU/ATM Noise At 20 Ft. Radius, 120° |
| 30 | APU/ATM Noise At 20 Ft. Radius, 150° |
| 31 | Right Aft MLG, Left Aft Tire |
| 32 | Right Aft MLG, Between Aft Tires |
| 33 | Right Aft MLG, Right Aft Tire |
| 34 | Right Aft MLG, Left Forward Tire |
| 35 | Right Aft MLG, Right Forward Tire |
| 36 | Right Aft MLG, 5-10 Ft. To Right |
| 37 | Right Aft MLG, Under TIS Exhaust |
| 38 | Right Aft MLG, 3-5 Ft. Forward TIS Exhaust |
| 39 | Right Forward MLG, Left Aft Tire |
| 40 | Right Forward MLG, Right Aft Tire |
| 41 | Right Forward MLG, Left Forward Tire |
| 42 | Right Forward MLG, Right Forward Tire |
| 43 | Left Forward MLG, Right Aft Tire |
| 44 | Left Aft MLG, Right Forward Tire |
| 45 | Left Aft MLG, Right Aft Tire |

Aircraft Engine and Power Unit Operations

| | |
|---|--|
| A | Engine #1 Idle, APU and ATM ON |
| B | Engine #1 & 2 Idle, APU and ATM ON |
| C | Engine #1, 2, and 3 Idle, APU and ATM ON |

D
E
F
G
H
I
J
K
L
M

All Engines Idle, APU and ATM ON
All Engines 2.0 EPR, APU and ATM ON
Engine #3 Idle, APU and ATM ON
Engine #3 2.3 EPR, APU and ATM ON
Engine #3 4.26 EPR, APU and ATM ON
APU On, All Engines OFF
PTU ON (Flaps Operated To Load PTU), Engines OFF
ATM and APU ON, All Engines OFF
Tire Inflation System ON, All Engines OFF
Engines #2 and 3 Idle, APU ON

ABBREVIATIONS

APU — Auxiliary Power Unit
ATM — Air Turbine Motor
EPR — Engine Pressure Ratio
NLG — Nose Landing Gear

MLG — Main Landing Gear
PTU — Power Transfer Unit
TIS — Tire Inflation System
SPR — Single Point Refueling

Meteorology

Altus AFB, Location 15 and 22 through 30

Temperature 27.8 C
Bar Pressure 0.727 M Hg
Rel Humidity 54 %
Wind — Speed 3.6 M/Sec (7 KTS)
— Direction 160 Deg

Wright-Patterson AFB, Location 31 through 45

Temperature 21 C
Bar Pressure 0.760 M Hg
Rel Humidity 73 %
Wind — Speed 3.6 M/Sec (7 KTS)

Edwards AFB, All Remaining Locations

Temperature 27 C
Bar Pressure 0.699 M Hg
Rel Humidity 33 %

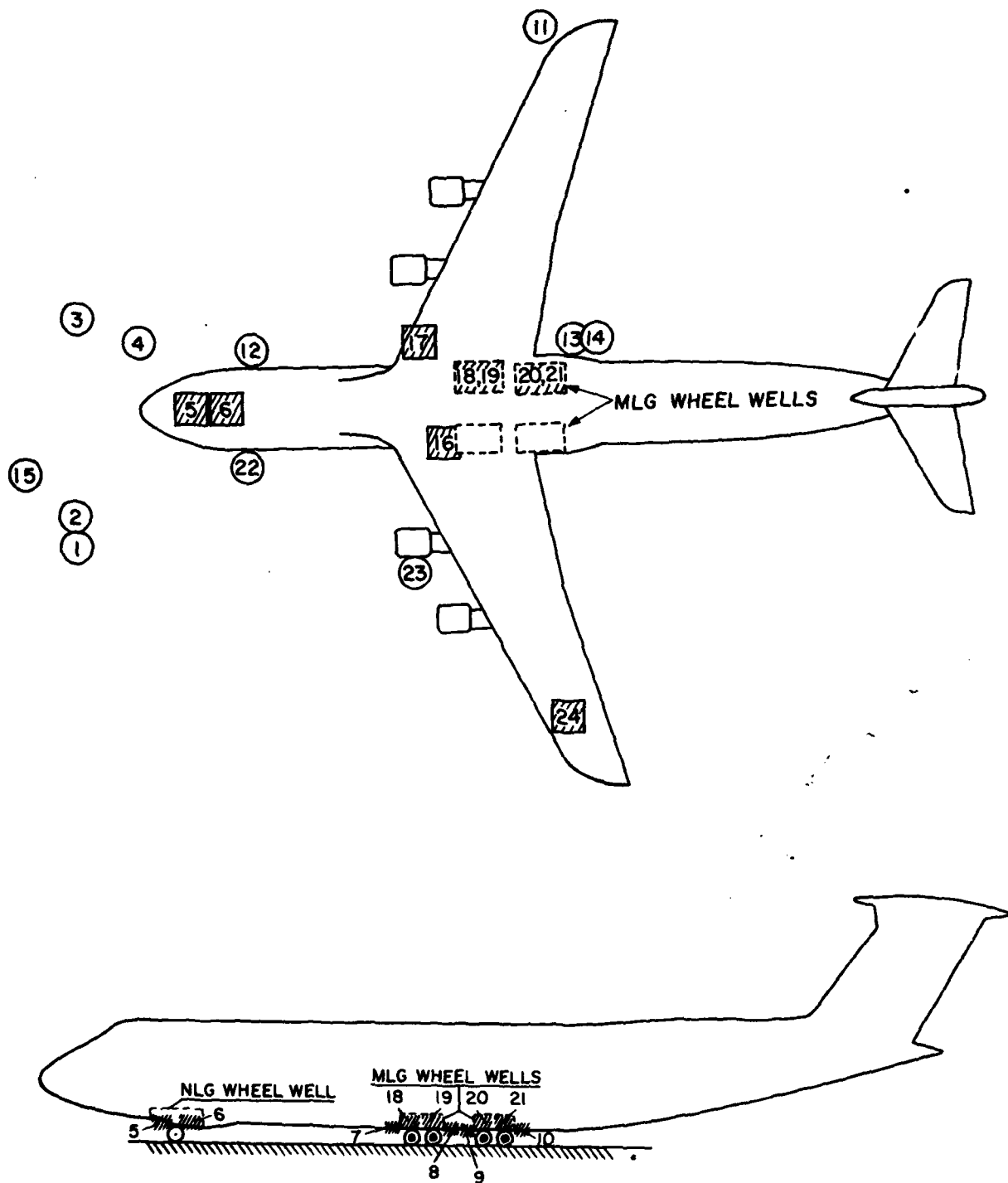


Figure 1. Near-Field Measurement Locations, Plan and Elevation View

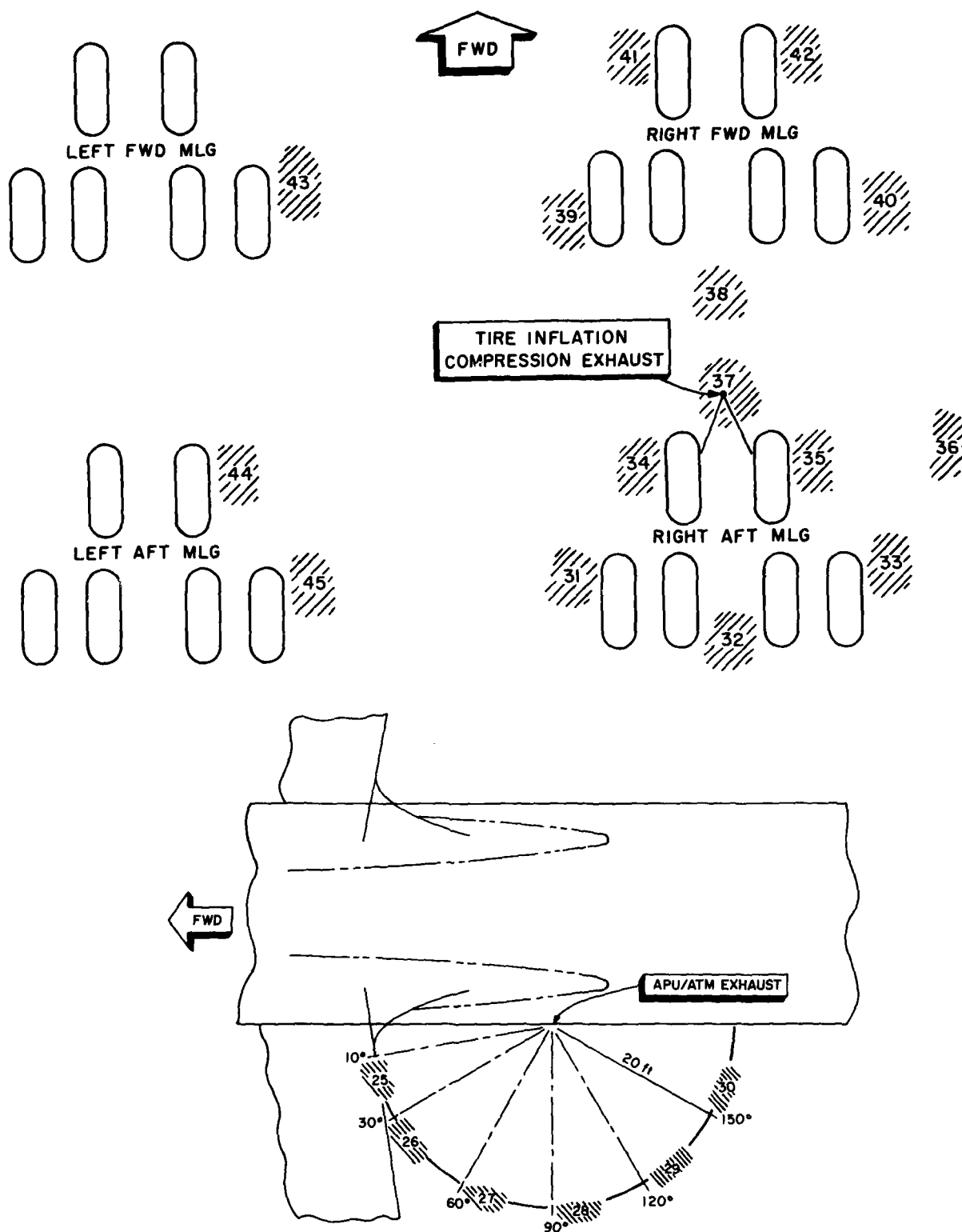


Figure 1. Near-Field Measurement Locations Around Tires and APU/ATM Exhaust

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired far-field data during a one hour test period, thus keeping similar meteorological conditions throughout the test. Figure 2 shows the ground runup pad, ground cover (short grass), aircraft orientation and the 19 microphone measurement sites on a semicircle. The center of the 100 meter radius semicircle used in surveying the TF39-GE-1 engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through the inboard engines' exhaust-nozzle exits. The ground runup area did not have a blast deflector; therefore, the engines' exhausts were in a "free-flow" condition.

Table 4 provides cockpit readouts of some engine characteristics (% RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of the source where the sound wavefronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand-held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone.

RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the C-5A aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power level and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure which describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

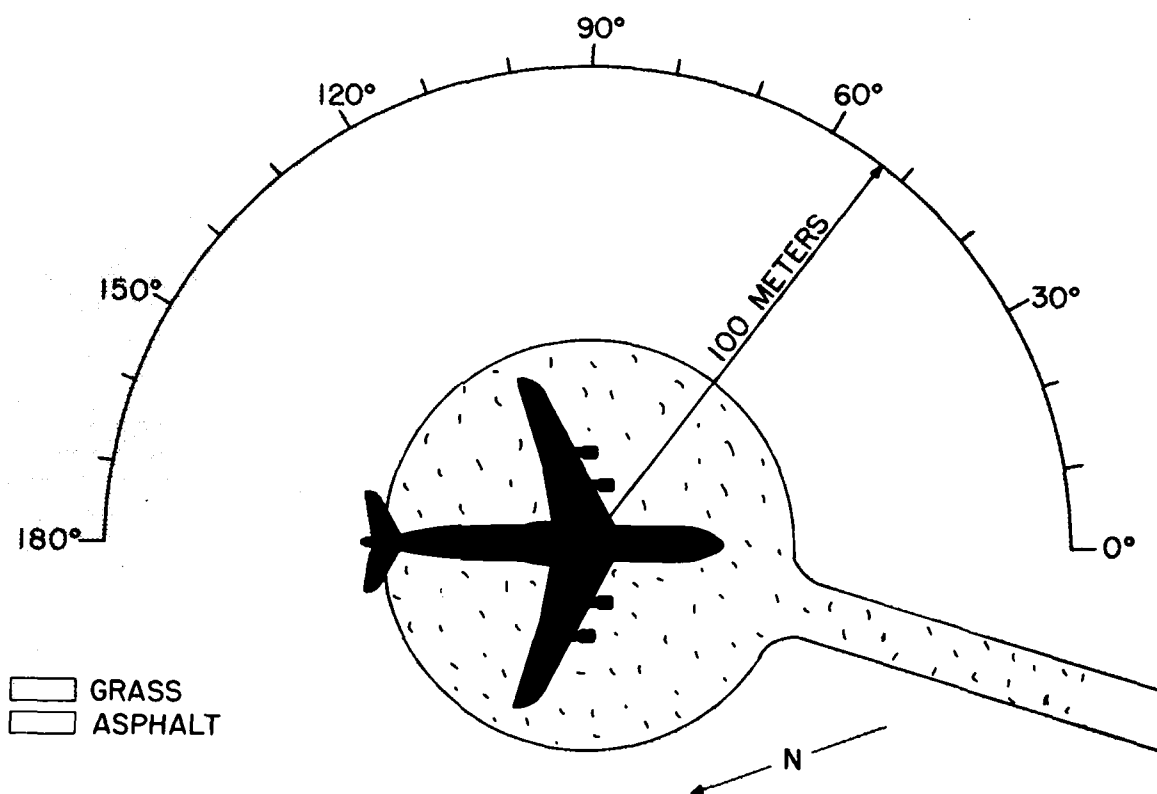


Figure 2. Far-Field Measurement Locations at Altus AFB OK

Estimates of noise characteristics for intermediate power settings (e.g., 88% engine) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

No data are presented at the 180 degree location for idle power nor at the 170 and 180 degree locations for all other power settings because of turbulent air flow behind the aircraft. Typical A-weighted levels for these angles are 5 to 15 dBA below those at the 160 degree location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low (e.g., Table 5 at idle power).

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | | | | IDENTIFICATION: |
|--|------|------|------|------|------|------|------|------|------|------|------|-----------------|
| 1/3 OCTAVE BAND | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | |
| OPERATION: | | | | | | | | | | | | |
| C-SA AIRCRAFT | | | | | | | | | | | | OMEGA 3.2 |
| GROUND CREW | | | | | | | | | | | | TEST 69-013-050 |
| NEAR FIELD NOISE LEVELS | | | | | | | | | | | | RUN 02 |
| | | | | | | | | | | | | 18 JAN 79 |
| | | | | | | | | | | | | PAGE F2 |
| LOCATION/CONDITION | | | | | | | | | | | | |
| FREQ (HZ) | 12/F | 12/G | 12/H | 13/I | 14/J | 16/J | 17/I | 18/I | 19/I | 20/I | 21/I | |
| 25 | 80 | 98 | 98 | 79 | 83 | 72 | 71 | 76 | 75 | 76 | 76 | 76 |
| 31.5 | 81 | 97 | 99 | 81 | 84 | 68 | 73 | 77 | 74 | 77 | 80 | 80 |
| 40 | 82 | 100 | 100 | 83 | 89 | 80 | 72 | 78 | 76 | 81 | 81 | 81 |
| 50 | 81 | 101 | 99 | 89 | 97 | 80 | 74 | 80 | 74 | 86 | 85 | 85 |
| 63 | 82 | 101 | 101 | 91 | 99 | 80 | 77 | 81 | 75 | 88 | 87 | 87 |
| 80 | 81 | 101 | 102 | 88 | 96 | 83 | 78 | 84 | 80 | 88 | 85 | 85 |
| 100 | 83 | 102 | 105 | 94 | 97 | 86 | 79 | 86 | 81 | 86 | 87 | 87 |
| 125 | 83 | 99 | 104 | 94 | 95 | 88 | 80 | 82 | 81 | 88 | 90 | 90 |
| 160 | 85 | 101 | 106 | 94 | 96 | 88 | 80 | 83 | 83 | 88 | 88 | 88 |
| 200 | 87 | 102 | 107 | 93 | 99 | 92 | 85 | 90 | 91 | 87 | 90 | 90 |
| 250 | 89 | 103 | 109 | 94 | 96 | 99 | 92 | 98 | 94 | 88 | 87 | 87 |
| 315 | 91 | 107 | 108 | 96 | 96 | 90 | 95 | 92 | 94 | 91 | 89 | 89 |
| 400 | 93 | 106 | 110 | 98 | 95 | 88 | 84 | 91 | 89 | 88 | 87 | 87 |
| 500 | 104 | 107 | 109 | 98 | 98 | 91 | 82 | 82 | 84 | 88 | 87 | 87 |
| 630 | 99 | 107 | 109 | 98 | 102 | 97 | 88 | 86 | 86 | 89 | 90 | 90 |
| 800 | 97 | 110 | 114 | 98 | 100 | 116 | 100 | 99 | 99 | 95 | 97 | 97 |
| 1000 | 100 | 116 | 121 | 97 | 100 | 105 | 87 | 87 | 88 | 89 | 89 | 89 |
| 1250 | 97 | 117 | 120 | 97 | 99 | 94 | 82 | 86 | 87 | 89 | 89 | 89 |
| 1600 | 100 | 125 | 120 | 97 | 98 | 103 | 84 | 86 | 87 | 88 | 90 | 90 |
| 2000 | 97 | 121 | 124 | 98 | 100 | 97 | 81 | 85 | 85 | 88 | 89 | 89 |
| 2500 | 95 | 119 | 120 | 98 | 100 | 108 | 84 | 88 | 87 | 89 | 89 | 89 |
| 3150 | 96 | 122 | 120 | 101 | 101 | 108 | 82 | 83 | 85 | 88 | 89 | 89 |
| 4000 | 100 | 120 | 122 | 108 | 108 | 98 | 85 | 87 | 88 | 94 | 95 | 95 |
| 5000 | 97 | 121 | 120 | 104 | 105 | 96 | 83 | 85 | 86 | 91 | 91 | 91 |
| 6300 | 94 | 119 | 121 | 105 | 105 | 95 | 92 | 94 | 97 | 92 | 93 | 93 |
| 8000 | 93 | 119 | 120 | 107 | 108 | 94 | 86 | 88 | 90 | 92 | 92 | 92 |
| 10000 | 94 | 118 | 119 | 117 | 117 | 94 | 92 | 93 | 93 | 101 | 102 | 102 |
| 12500 | 92 | 115 | 117 | 112 | 112 | 94 | 86 | 86 | 88 | 95 | 95 | 95 |
| 16000 | 90 | 116 | 118 | 111 | 110 | 90 | 80 | 82 | 84 | 97 | 91 | 91 |
| OVERALL | 110 | 131 | 132 | 120 | 120 | 117 | 103 | 103 | 104 | 106 | 106 | 106 |
| LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE. | | | | | | | | | | | | |

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | IDENTIFICATION: | |
|---|-----|--------------------|------|
| 1/3 OCTAVE BAND | | | |
| 2 | | OMEGA 3.2 | |
| | | TEST 78-015-001 | |
| NOISE SOURCE/SUBJECT: | | RUN 01 | |
| (OPERATION: | | | |
| (| | | |
| C-5A AIRCRAFT | | 18 JAN 79 | |
| (| | | |
| GROUND CREW | | | |
| (| | | |
| NEAR FIELD NOISE LEVELS | | PAGE F1 | |
| (| | | |
| | | LOCATION/CONDITION | |
| | | 15/M | 15/G |
| FREQ | | 23/M | 24/M |
| (HZ) | | | |
| 25 | 89 | 74< | 78< |
| 31.5 | 71< | 76< | 79 |
| 40 | 93 | 80 | 79 |
| 50 | 71< | 77< | 81 |
| 63 | 94 | 73< | 78 |
| 80 | 77 | 79 | 89 |
| 100 | 94 | 86 | 89 |
| 125 | 78< | 76 | 76 |
| 160 | 97 | 81 | 76 |
| 200 | 75< | 100 | 93 |
| 250 | 71< | 84 | 80 |
| 315 | 96 | 73< | 86 |
| 400 | 71 | 74 | 83 |
| 500 | 97 | 83 | 76 |
| 630 | 74 | 77 | 81 |
| 800 | 93 | 87 | 82 |
| 1000 | 76 | 79 | 82 |
| 1250 | 88 | 86 | 84 |
| 1600 | 94 | 88 | 84 |
| 2000 | 77 | 84 | 85 |
| 2500 | 85 | 92 | 97 |
| 3150 | 92 | 100 | 97 |
| 4000 | 86 | 95 | 90 |
| 5000 | 94 | 90 | 87 |
| 6300 | 83 | 89 | 94 |
| 8000 | 89 | 100 | 94 |
| 10000 | 89 | 94 | 90 |
| | 105 | 93 | 90 |
| | 87 | 95 | 96 |
| | 110 | 99 | 96 |
| | 89 | 94 | 92 |
| | 120 | 96 | 92 |
| | 90 | 93 | 90 |
| | 110 | 94 | 90 |
| | 88 | 106 | 94 |
| | 91 | 112 | 95 |
| | 112 | 100 | 91 |
| | 88 | 93 | 91 |
| | 107 | 96 | 87 |
| | 80 | 90 | 85 |
| | 104 | 88 | 85 |
| | 79 | 86 | 88 |
| | 102 | 91 | 88 |
| OVERALL | 99 | 122 | 104 |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| | | | | | | |
|--|-----------------|--------------------|-----------------|------|------|------|
| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | IDENTIFICATION: | | | | |
| 2 | 1/3 OCTAVE BAND | | | | | |
| NOISE SOURCE/SUBJECT: | | OPERATION: | OMEGA 3.2 | | | |
| C-5A AIRCRAFT | | | TEST 78-015-001 | | | |
| GROUND CREW | | | RUN 02 | | | |
| NEAR FIELD NOISE LEVELS | | | 10 JAN 79 | | | |
| | | | PAGE F2 | | | |
| | | LOCATION/CONDITION | | | | |
| FREQ (HZ) | 25/K | 26/K | 27/K | 28/K | 29/K | 30/K |
| 25 | 77< | 80< | 74< | 74< | 76< | 75< |
| 31.5 | 77< | 79 | 76< | 76< | 75< | 76< |
| 40 | 79 | 78 | 77< | 77< | 76< | 76< |
| 50 | 81 | 79 | 78 | 77 | 77 | 77 |
| 63 | 79 | 79 | 81 | 81 | 80 | 81 |
| 80 | 77 | 76 | 78 | 78 | 78 | 77 |
| 100 | 82 | 80 | 81 | 79 | 80 | 79 |
| 125 | 81 | 81 | 80 | 78 | 79 | 79 |
| 160 | 83 | 83 | 84 | 83 | 82 | 82 |
| 200 | 86 | 87 | 88 | 88 | 87 | 86 |
| 250 | 86 | 87 | 88 | 88 | 87 | 87 |
| 315 | 88 | 89 | 88 | 88 | 90 | 88 |
| 400 | 88 | 90 | 91 | 90 | 90 | 89 |
| 500 | 88 | 89 | 90 | 90 | 89 | 88 |
| 630 | 96 | 92 | 91 | 90 | 90 | 89 |
| 800 | 95 | 100 | 97 | 91 | 92 | 95 |
| 1000 | 92 | 94 | 93 | 92 | 91 | 92 |
| 1250 | 92 | 93 | 94 | 93 | 92 | 93 |
| 1600 | 93 | 93 | 92 | 93 | 91 | 91 |
| 2000 | 92 | 92 | 94 | 95 | 95 | 94 |
| 2500 | 94 | 94 | 96 | 97 | 97 | 96 |
| 3150 | 93 | 94 | 97 | 99 | 100 | 98 |
| 4000 | 94 | 96 | 99 | 102 | 105 | 102 |
| 5000 | 95 | 96 | 99 | 103 | 106 | 102 |
| 6300 | 99 | 102 | 105 | 107 | 109 | 104 |
| 8000 | 102 | 104 | 107 | 108 | 107 | 103 |
| 10000 | 114 | 114 | 117 | 121 | 118 | 114 |
| OVERALL | 114 | 115 | 118 | 121 | 119 | 116 |
| < LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE. | | | | | | |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | | | | | | | |
| 1/3 OCTAVE BAND | | | | | | | | | | | | | | | |
| IDENTIFICATION: | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: (OPERATION:) | | | | | | | | | | | | | | | |
| C-5A AIRCRAFT | | | | | | | | | | | | | | | |
| GROUND CREW | | | | | | | | | | | | | | | |
| NEAR FIELD NOISE LEVELS | | | | | | | | | | | | | | | |
| PAGE F4 | | | | | | | | | | | | | | | |
| LOCATION/CONDITION | | | | | | | | | | | | | | | |
| FREQ (HZ) | 31/L | 32/L | 33/L | 34/L | 35/L | 36/L | 37/L | 38/L | 39/L | 40/L | 41/L | 42/L | 43/L | 44/L | 45/L |
| 25 | 84 | 87 | 82 | 88 | 88 | 78 | 84 | 88 | 80 | 77 | 79 | 76 | 78 | 77 | 82 |
| 31.5 | 84 | 86 | 84 | 87 | 86 | 79 | 85 | 80 | 78 | 78 | 79 | 77 | 75 | 77 | 79 |
| 40 | 80 | 86 | 82 | 85 | 85 | 79 | 84 | 80 | 81 | 78 | 80 | 77 | 75 | 80 | 81 |
| 50 | 81 | 85 | 84 | 84 | 86 | 81 | 83 | 82 | 81 | 80 | 77 | 80 | 80 | 77 | 80 |
| 63 | 81 | 87 | 83 | 86 | 85 | 81 | 85 | 84 | 80 | 80 | 79 | 81 | 79 | 79 | 80 |
| 80 | 82 | 89 | 84 | 84 | 86 | 86 | 86 | 83 | 81 | 80 | 79 | 83 | 82 | 82 | 85 |
| 100 | 84 | 87 | 86 | 84 | 86 | 84 | 84 | 87 | 82 | 82 | 82 | 82 | 84 | 84 | 86 |
| 125 | 84 | 86 | 86 | 85 | 85 | 81 | 86 | 86 | 82 | 82 | 82 | 82 | 82 | 84 | 85 |
| 160 | 82 | 85 | 83 | 88 | 87 | 83 | 90 | 90 | 84 | 80 | 85 | 80 | 82 | 81 | 83 |
| 200 | 85 | 87 | 84 | 92 | 88 | 86 | 90 | 91 | 88 | 81 | 87 | 81 | 85 | 83 | 85 |
| 250 | 86 | 89 | 86 | 92 | 90 | 87 | 92 | 92 | 87 | 85 | 86 | 82 | 83 | 86 | 83 |
| 315 | 89 | 92 | 87 | 92 | 91 | 87 | 92 | 92 | 87 | 86 | 88 | 85 | 83 | 85 | 85 |
| 400 | 92 | 92 | 92 | 95 | 96 | 90 | 96 | 93 | 92 | 89 | 89 | 88 | 85 | 87 | 88 |
| 500 | 93 | 93 | 92 | 96 | 96 | 89 | 96 | 94 | 91 | 89 | 88 | 87 | 89 | 88 | 90 |
| 630 | 94 | 93 | 95 | 98 | 98 | 91 | 98 | 96 | 94 | 90 | 90 | 89 | 89 | 89 | 91 |
| 800 | 94 | 95 | 92 | 99 | 98 | 91 | 98 | 96 | 93 | 90 | 90 | 88 | 90 | 91 | 93 |
| 1000 | 97 | 96 | 95 | 101 | 103 | 93 | 102 | 99 | 95 | 93 | 93 | 91 | 92 | 92 | 95 |
| 1250 | 98 | 97 | 96 | 103 | 103 | 95 | 103 | 99 | 95 | 93 | 93 | 92 | 94 | 94 | 96 |
| 1600 | 98 | 98 | 95 | 104 | 104 | 96 | 103 | 100 | 96 | 94 | 95 | 93 | 95 | 95 | 96 |
| 2000 | 101 | 100 | 98 | 106 | 106 | 98 | 107 | 104 | 100 | 96 | 98 | 96 | 97 | 97 | 100 |
| 2500 | 104 | 103 | 100 | 110 | 109 | 100 | 109 | 105 | 102 | 99 | 100 | 98 | 100 | 99 | 102 |
| 3150 | 105 | 104 | 103 | 111 | 111 | 102 | 110 | 106 | 103 | 100 | 101 | 99 | 101 | 101 | 104 |
| 4000 | 107 | 105 | 104 | 114 | 112 | 103 | 111 | 107 | 104 | 101 | 102 | 100 | 101 | 101 | 105 |
| 5000 | 107 | 107 | 106 | 115 | 113 | 105 | 112 | 108 | 105 | 102 | 103 | 101 | 103 | 102 | 106 |
| 6300 | 106 | 104 | 104 | 113 | 113 | 103 | 111 | 107 | 104 | 100 | 101 | 99 | 100 | 101 | 104 |
| 8000 | 106 | 104 | 104 | 113 | 114 | 104 | 111 | 106 | 104 | 100 | 102 | 99 | 101 | 101 | 105 |
| 10000 | 104 | 103 | 103 | 112 | 113 | 103 | 110 | 104 | 102 | 99 | 99 | 98 | 98 | 98 | 103 |
| 12500 | 101 | 99 | 101 | 110 | 111 | 101 | 109 | 101 | 99 | 95 | 95 | 94 | 95 | 96 | 101 |
| 16000 | 100 | 97 | 100 | 109 | 111 | 100 | 108 | 99 | 97 | 93 | 93 | 92 | 92 | 93 | 99 |
| OVERALL | 115 | 114 | 113 | 122 | 122 | 113 | 120 | 116 | 113 | 110 | 111 | 109 | 110 | 110 | 114 |
| LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE. | | | | | | | | | | | | | | | |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | | | | | | | IDENTIFICATION: |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-----------------|
| OCTAVE BAND | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | | | | OPERATIONS: |
| C-5A AIRCRAFT | | | | | | | | | | | | | | | OMEGA 3.2 |
| GROUND CREW | | | | | | | | | | | | | | | TEST 69-013-050 |
| NEAR FIELD NOISE LEVELS | | | | | | | | | | | | | | | RUN 01 |
| | | | | | | | | | | | | | | | 18 JAN 79 |
| | | | | | | | | | | | | | | | PAGE J1 |
| LOCATION/CONDITION | | | | | | | | | | | | | | | |
| FREQ (HZ) | 1/A | 2/B | 3/C | 3/D | 4/D | 4/E | 5/D | 6/D | 7/D | 8/D | 9/D | 10/D | 11/D | 11/E | |
| 31.5 | 70 | 75 | 78 | 79 | 79 | 88 | 92 | 90 | 91 | 92 | 91 | 91 | 86 | 97 | |
| 63 | 75 | 79 | 80 | 82 | 82 | 93 | 94 | 89 | 90 | 92 | 90 | 90 | 85 | 99 | |
| 125 | 77 | 90 | 90 | 91 | 87 | 94 | 83 | 87 | 99 | 97 | 95 | 97 | 86 | 96 | |
| 250 | 80 | 83 | 86 | 86 | 86 | 93 | 88 | 91 | 99 | 99 | 98 | 98 | 87 | 94 | |
| 500 | 84 | 94 | 95 | 96 | 94 | 94 | 101 | 102 | 110 | 107 | 110 | 109 | 96 | 98 | |
| 1000 | 89 | 93 | 95 | 95 | 96 | 114 | 99 | 101 | 108 | 106 | 106 | 105 | 95 | 116 | |
| 2000 | 88 | 92 | 95 | 96 | 96 | 113 | 101 | 102 | 105 | 106 | 106 | 105 | 95 | 112 | |
| 4000 | 89 | 94 | 95 | 98 | 99 | 109 | 99 | 100 | 104 | 104 | 104 | 104 | 92 | 110 | |
| 8000 | 81 | 86 | 87 | 88 | 91 | 105 | 92 | 93 | 102 | 102 | 103 | 105 | 85 | 106 | |
| 16000 | 68 | 75 | 77 | 77 | 80 | 95 | 81 | 83 | 96 | 96 | 98 | 101 | 85 | 99 | |
| OVERALL | 95 | 100 | 101 | 103 | 103 | 118 | 107 | 108 | 114 | 113 | 114 | 113 | 102 | 119 | |

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | | | | IDENTIFICATION: | |
|---|--|--|--|--|--|--|--|--|--|--|--|-----------------|--|
| 2 | | | | | | | | | | | | OMEGA 3.2 | |
| | | | | | | | | | | | | TEST 69-013-050 | |
| | | | | | | | | | | | | RUN 02 | |
| | | | | | | | | | | | | 18 JAN 79 | |
| | | | | | | | | | | | | PAGE J2 | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | OPERATION: | |
| C-5A AIRCRAFT | | | | | | | | | | | | | |
| GROUND CREW | | | | | | | | | | | | | |
| NEAR FIELD NOISE LEVELS | | | | | | | | | | | | | |
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| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | IDENTIFICATION: | |
|---|-------------|--------------------|------|
| 2 | OCTAVE BAND | | |
| NOISE SOURCE/SUBJECT: | | OMEGA 3.2 | |
| C-5A AIRCRAFT | | TEST 78-015-001 | |
| GROUND CREW | | RUN 01 | |
| NEAR FIELD NOISE LEVELS | | 18 JAN 79 | |
| | | PAGE J1 | |
| | | LOCATION/CONDITION | |
| FREQ (HZ) | | 15/M | 15/G |
| 31.5 | | 74 | 97 |
| 63 | | 78 | 100 |
| 125 | | 77 | 103 |
| 250 | | 82 | 98 |
| 500 | | 90 | 98 |
| 1000 | | 93 | 107 |
| 2000 | | 93 | 121 |
| 4000 | | 94 | 114 |
| 8000 | | 85 | 109 |
| OVERALL | | 99 | 122 |
| | | 106 | 112 |
| | | 104 | 104 |

| | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|--|--|--|
| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | |
| 2 | | | | | | | | | |
| NOISE SOURCE/SUBJECT: (OPERATION:) | | | | | | | | | |
| C-5A AIRCRAFT () | | | | | | | | | |
| GROUND CREW () | | | | | | | | | |
| NEAR FIELD NOISE LEVELS () | | | | | | | | | |
| LOCATION/CONDITION | | | | | | | | | |
| 25/K 26/K 27/K 28/K 29/K 30/K | | | | | | | | | |
| FREQ (HZ) | | | | | | | | | |
| 31.5 | 83 | 84 | 81 | 81 | 81 | 80 | | | |
| 63 | 84 | 83 | 84 | 83 | 83 | 83 | | | |
| 125 | 87 | 86 | 87 | 85 | 85 | 85 | | | |
| 250 | 91 | 93 | 93 | 93 | 93 | 92 | | | |
| 500 | 97 | 95 | 95 | 94 | 94 | 93 | | | |
| 1000 | 98 | 102 | 100 | 97 | 96 | 98 | | | |
| 2000 | 97 | 98 | 99 | 100 | 100 | 98 | | | |
| 4000 | 99 | 100 | 103 | 106 | 109 | 105 | | | |
| 8000 | 114 | 115 | 117 | 121 | 119 | 115 | | | |
| OVERALL | 114 | 115 | 118 | 121 | 119 | 116 | | | |

IDENTIFICATION:

OMEGA 3.2

TEST 78-015-001

RUN 02

16 JAN 79

PAGE J2

| TABLE: | MEASURED SOUND PRESSURE LEVEL (DB) | IDENTIFICATION: |
|-------------------------|--|-----------------|
| 2 | OCTAVE BAND | |
| NOISE SOURCE/SUBJECT: | OPERATION: | OMEGA 3.2 |
| C-5A AIRCRAFT | | TEST 69-013-050 |
| GROUND CREW | | RUN 04 |
| NEAR FIELD NOISE LEVELS | | 18 JAN 79 |
| | | PAGE J4 |
| | LOCATION/CONDITION | |
| FREQ (HZ) | 31/L 32/L 33/L 34/L 35/L 36/L 37/L 38/L 39/L 40/L 41/L 42/L 43/L 44/L 45/L | |
| 31.5 | 88 91 88 92 91 91 83 89 85 85 82 84 81 81 86 | 83 86 |
| 63 | 86 92 88 90 90 90 84 90 85 85 83 81 81 85 87 | 81 87 |
| 125 | 88 91 90 91 91 91 85 92 86 86 84 87 88 88 90 | 88 90 |
| 250 | 92 95 91 97 95 95 91 96 92 89 92 88 89 90 89 | 90 89 |
| 500 | 98 98 98 101 102 102 95 102 99 97 94 94 93 93 95 | 93 95 |
| 1000 | 101 101 99 106 107 107 98 106 103 99 97 97 97 97 100 | 97 100 |
| 2000 | 106 106 103 112 112 112 103 112 108 105 102 103 101 103 102 105 | 102 105 |
| 4000 | 111 110 109 118 117 117 108 116 112 109 106 107 105 107 106 110 | 107 110 |
| 8000 | 110 108 108 117 118 118 108 115 111 108 104 106 103 105 105 109 | 105 109 |
| 16000 | 104 101 104 113 113 114 114 112 103 101 97 97 96 97 98 103 | 98 103 |
| OVERALL | 115 114 113 122 122 122 122 120 116 113 110 109 110 110 114 | 110 114 |

| TABLE: MEASURES OF HUMAN NOISE EXPOSURE | | | | | | | | | | | IDENTIFICATION: | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|------|------|
| 3 | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECTS: (OPERATION:) | | | | | | | | | | | OMEGA 3.2 | | |
| C-5A AIRCRAFT () | | | | | | | | | | | TEST 69-013-058 | | |
| GROUND CREW () | | | | | | | | | | | RUN 01 | | |
| NEAR FIELD NOISE LEVELS () | | | | | | | | | | | 18 JAN 79 | | |
| | | | | | | | | | | | PAGE H1 | | |
| LOCATION/CONDITION | | | | | | | | | | | | | |
| 1/A | 2/B | 3/C | 3/D | 4/D | 4/E | 5/D | 6/D | 7/D | 8/D | 9/D | 10/D | 11/D | 11/E |
| HAZARD/PROTECTION | | | | | | | | | | | | | |
| C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR | | | | | | | | | | | | | |
| A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR | | | | | | | | | | | | | |
| MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) | | | | | | | | | | | | | |
| NO PROTECTION | | | | | | | | | | | | | |
| OASLC | 94 | 100 | 101 | 103 | 103 | 117 | 106 | 108 | 114 | 112 | 113 | 101 | 116 |
| OASLA | 95 | 99 | 101 | 103 | 103 | 118 | 106 | 107 | 113 | 112 | 113 | 101 | 119 |
| T | 71 | 36 | 25 | 18 | 18 | P | 11 | 9 | 3.2 | 3.8 | 3.2 | 25 | P |
| MINIMUM QPL EAR MUFFS | | | | | | | | | | | | | |
| OASLA* | 68 | 75 | 76 | 77 | 76 | 89 | 81 | 82 | 89 | 87 | 89 | 88 | 76 |
| T | 960 | 960 | 960 | 960 | 960 | 202 | 607 | 679 | 202 | 285 | 202 | 240 | 960 |
| AMERICAN OPTICAL 1700 EAR MUFFS | | | | | | | | | | | | | |
| OASLA* | 62 | 69 | 70 | 71 | 70 | 83 | 75 | 76 | 83 | 81 | 83 | 70 | 85 |
| T | 960 | 960 | 960 | 960 | 960 | 571 | 960 | 960 | 571 | 807 | 571 | 960 | 484 |
| V-51R EAR PLUGS | | | | | | | | | | | | | |
| OASLA* | 68 | 73 | 74 | 76 | 76 | 90 | 80 | 81 | 88 | 86 | 87 | 75 | 92 |
| T | 960 | 960 | 960 | 960 | 960 | 170 | 960 | 807 | 240 | 339 | 285 | 960 | 120 |
| AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS | | | | | | | | | | | | | |
| OASLA* | 54 | 59 | 60 | 61 | 62 | 78 | 66 | 67 | 74 | 72 | 73 | 61 | 80 |
| T | 960 | 960 | 960 | 960 | 960 | 960 | 960 | 960 | 960 | 960 | 960 | 960 | 960 |
| H-133 GROUND COMMUNICATION UNIT | | | | | | | | | | | | | |
| OASLA* | 67 | 71 | 73 | 74 | 75 | 91 | 78 | 79 | 84 | 84 | 83 | 73 | 92 |
| T | 960 | 960 | 960 | 960 | 960 | 143 | 960 | 960 | 480 | 480 | 571 | 960 | 120 |
| COMMUNICATION | | | | | | | | | | | | | |
| PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB) | | | | | | | | | | | | | |
| PSIL | 87 | 93 | 95 | 96 | 95 | 107 | 101 | 102 | 108 | 106 | 107 | 106 | 109 |
| ANNOYANCE | | | | | | | | | | | | | |
| PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PND8) | | | | | | | | | | | | | |
| TONE CORRECTION (C IN DB) | | | | | | | | | | | | | |
| PNLT | 111 | 118 | 118 | 119 | 120 | 130 | 122 | 123 | 129 | 127 | 128 | 128 | 133 |
| C | 3 | 4 | 3 | 2 | 2 | 1 | 3 | 3 | 3 | 2 | 3 | 2 | 3 |

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.
P ADDITIONAL EAR PROTECTION REQUIRED.

| TABLE: MEASURES OF HUMAN NOISE EXPOSURE | | | | | | | | | | | IDENTIFICATION: | |
|--|--|--|--|--|--|--|--|--|--|--|-----------------|--|
| 3 | | | | | | | | | | | OMEGA 3.2 | |
| NOISE SOURCE/SUBJECT: (OPERATION:) | | | | | | | | | | | TEST 69-013-058 | |
| C-5A AIRCRAFT () | | | | | | | | | | | RUN 02 | |
| GROUND CREW () | | | | | | | | | | | 16 JAN 79 | |
| NEAR FIELD NOISE LEVELS () | | | | | | | | | | | PAGE M2 | |
| LOCATION/CONDITION | | | | | | | | | | | | |
| 12/F 12/G 12/H 13/I 14/I 16/J 17/I 18/I 19/I 20/I 21/I | | | | | | | | | | | | |
| HAZARD/PROTECTION | | | | | | | | | | | | |
| C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR | | | | | | | | | | | | |
| A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR | | | | | | | | | | | | |
| MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) | | | | | | | | | | | | |
| NO PROTECTION | | | | | | | | | | | | |
| OASLC 110 130 131 116 117 117 103 103 104 104 104 | | | | | | | | | | | | |
| OASLA 110 132 132 118 118 117 101 102 103 104 105 | | | | | | | | | | | | |
| T 5 P P P P P 25 21 18 15 13 | | | | | | | | | | | | |
| MINIMUM QPL EAR HUFFS | | | | | | | | | | | | |
| OASLA* 85 104 105 96 96 89 77 78 79 82 81 | | | | | | | | | | | | |
| T 404 15 13 60 60 202 960 960 679 807 | | | | | | | | | | | | |
| AMERICAN OPTICAL 1700 EAR HUFFS | | | | | | | | | | | | |
| OASLA* 79 99 100 93 93 83 73 73 74 78 78 | | | | | | | | | | | | |
| T 960 36 30 101 101 571 960 960 960 960 960 | | | | | | | | | | | | |
| V-51R EAR PLUGS | | | | | | | | | | | | |
| OASLA* 84 102 103 90 91 92 77 77 77 78 78 | | | | | | | | | | | | |
| T 480 21 18 170 143 120 960 960 960 960 960 | | | | | | | | | | | | |
| AMERICAN OPTICAL 1700 EAR HUFFS PLUS V-51R EAR PLUGS | | | | | | | | | | | | |
| OASLA* 69 89 91 80 80 79 64 63 64 66 66 | | | | | | | | | | | | |
| T 960 202 143 960 960 960 960 960 960 960 960 | | | | | | | | | | | | |
| H-133 GROUND COMMUNICATION UNIT | | | | | | | | | | | | |
| OASLA* 81 104 104 90 90 90 73 74 74 76 77 | | | | | | | | | | | | |
| T 807 15 10 170 170 170 960 960 960 960 960 | | | | | | | | | | | | |
| COMMUNICATION | | | | | | | | | | | | |
| PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB) | | | | | | | | | | | | |
| PSIL 104 120 122 102 104 106 93 94 94 94 95 | | | | | | | | | | | | |
| ANNOUNCE | | | | | | | | | | | | |
| PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PND8) | | | | | | | | | | | | |
| TONE CORRECTION (C IN DB) | | | | | | | | | | | | |
| PNLT 125 146 146 132 132 132 117 119 120 119 121 | | | | | | | | | | | | |
| C 3 2 1 2 2 5 4 4 3 2 2 | | | | | | | | | | | | |
| * BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE. | | | | | | | | | | | | |
| P ADDITIONAL EAR PROTECTION REQUIRED. | | | | | | | | | | | | |

| | |
|--|--------------------------|
| TABLE: MEASURES OF HUMAN NOISE EXPOSURE | IDENTIFICATION: |
| 3 | |
| NOISE SOURCE/SUBJECT: | OMEGA 3.2 |
| | TEST 78-015-001 |
| | RUN 01 |
| C-5A AIRCRAFT | |
| GROUND CREW | 18 JAN 79 |
| NEAR FIELD NOISE LEVELS | PAGE 41 |
| | |
| | LOCATION/CONDITION |
| | 15/M 15/G 22/M 23/M 24/M |
| HAZARD/PROTECTION | |
| C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR | |
| A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR | |
| MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) | |
| NO PROTECTION | |
| OASLC | 99 122 106 111 104 |
| OASLA | 99 123 106 110 103 |
| T | 36 P 11 5 18 |
| MINIMUM QPL EAR MUFFS | |
| OASLA* | 72 94 80 87 79 |
| T | 960 85 960 285 960 |
| AMERICAN OPTICAL 1700 EAR MUFFS | |
| OASLA* | 65 88 74 82 73 |
| T | 960 240 960 679 960 |
| V-51R EAR PLUGS | |
| OASLA* | 72 91 80 85 77 |
| T | 960 143 960 404 960 |
| AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS | |
| OASLA* | 58 78 64 70 63 |
| T | 960 960 960 960 960 |
| H-133 GROUND COMMUNICATION UNIT | |
| OASLA* | 72 94 77 80 75 |
| T | 960 85 960 960 960 |
| COMMUNICATION | |
| PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB) | |
| PSIL | 92 108 99 104 97 |
| ANNOYANCE | |
| PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB) | |
| TONE CORRECTION (C IN DB) | 114 139 124 128 120 |
| PNLT | 2 3 4 6 3 |
| C | |

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.
P ADDITIONAL EAR PROTECTION REQUIRED.

| TABLE: MEASURES OF HUMAN NOISE EXPOSURE | | IDENTIFICATION: | |
|--|------------|--------------------|-----------------|
| NOISE SOURCE/SUBJECT: | OPERATION: | | |
| 3 | | | |
| C-5A AIRCRAFT | (| | OMEGA 3.2 |
| GROUND CREW | (| | TEST 78-015-001 |
| NEAR FIELD NOISE LEVELS | (| | RUN 02 |
| | | | 18 JAN 79 |
| | | | PAGE H2 |
| 25/K 26/K 27/K 28/K 29/K 30/K | | LOCATION/CONDITION | |
| HAZARD/PROTECTION | | | |
| C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR | | | |
| A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR | | | |
| MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) | | | |
| NO PROTECTION | | | |
| OASLC | 111 | 112 | 114 |
| OASLA | 112 | 113 | 116 |
| T | 3.0 | 3.2 | P |
| MINIMUM QPL EAR MUFFS | | | |
| OASLA* | 90 | 90 | 93 |
| T | 170 | 170 | 101 |
| AMERICAN OPTICAL 1700 EAR MUFFS | | | |
| OASLA* | 87 | 88 | 90 |
| T | 285 | 240 | 170 |
| V-51R EAR PLUGS | | | |
| OASLA* | 84 | 85 | 87 |
| T | 480 | 404 | 285 |
| AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS | | | |
| OASLA* | 75 | 75 | 78 |
| T | 960 | 960 | 807 |
| H-133 GROUND COMMUNICATION UNIT | | | |
| OASLA* | 84 | 85 | 87 |
| T | 480 | 404 | 285 |
| COMMUNICATION | | | |
| PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB) | | | |
| PSIL | 98 | 98 | 97 |
| ANNOYANCE | | | |
| PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PHD8) | | | |
| TONE CORRECTION (C IN DB) | | | |
| PNLT | 126 | 128 | 129 |
| C | 2 | 2 | 2 |

| TABLE: MEASURES OF HUMAN NOISE EXPOSURE | | | | | | | | | | | | | | IDENTIFICATION: | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|-----|
| 3 | | | | | | | | | | | | | | OMEGA 3.2 | |
| NOISE SOURCE/SUBJECT: (OPERATIONS) | | | | | | | | | | | | | | TEST 69-013-050 | |
| C-5A AIRCRAFT | | | | | | | | | | | | | | RUN 04 | |
| GROUND CREW | | | | | | | | | | | | | | 18 JAN 79 | |
| NEAR FIELD NOISE LEVELS () | | | | | | | | | | | | | | PAGE 14 | |
| LOCATION/CONDITION | | | | | | | | | | | | | | | |
| 31/L | 32/L | 33/L | 34/L | 35/L | 36/L | 37/L | 38/L | 39/L | 40/L | 41/L | 42/L | 43/L | 44/L | 45/L | |
| HAZARD/PROTECTION | | | | | | | | | | | | | | | |
| C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR | | | | | | | | | | | | | | | |
| A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR | | | | | | | | | | | | | | | |
| MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) | | | | | | | | | | | | | | | |
| NO PROTECTION | | | | | | | | | | | | | | | |
| OASLC | 114 | 113 | 112 | 120 | 120 | 111 | 119 | 115 | 112 | 108 | 109 | 107 | 109 | 109 | 112 |
| OASLA | 115 | 114 | 113 | 122 | 122 | 112 | 120 | 116 | 113 | 110 | 111 | 109 | 110 | 110 | 114 |
| T | 2.2 | 2.7 | 3.2 | P | P | 3.8 | P | P | 3.2 | 5 | 4.5 | 6 | 5 | 5 | 2.7 |
| MINIMUM QPL EAR MUFFS | | | | | | | | | | | | | | | |
| OASLA* | 89 | 88 | 88 | 96 | 97 | 87 | 95 | 90 | 87 | 84 | 84 | 83 | 84 | 84 | 88 |
| T | 202 | 240 | 240 | 60 | 50 | 285 | 71 | 170 | 285 | 480 | 480 | 571 | 480 | 480 | 240 |
| AMERICAN OPTICAL 1700 EAR MUFFS | | | | | | | | | | | | | | | |
| OASLA* | 84 | 82 | 83 | 92 | 93 | 83 | 90 | 84 | 82 | 78 | 79 | 77 | 78 | 79 | 83 |
| T | 480 | 679 | 571 | 120 | 101 | 571 | 170 | 480 | 679 | 960 | 960 | 960 | 960 | 960 | 571 |
| V-51R EAR PLUGS | | | | | | | | | | | | | | | |
| OASLA* | 85 | 84 | 84 | 92 | 92 | 83 | 90 | 86 | 83 | 80 | 81 | 79 | 80 | 80 | 84 |
| T | 404 | 480 | 480 | 120 | 120 | 571 | 170 | 339 | 571 | 960 | 807 | 960 | 960 | 960 | 480 |
| AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS | | | | | | | | | | | | | | | |
| OASLA* | 73 | 72 | 72 | 81 | 81 | 71 | 79 | 74 | 71 | 68 | 69 | 67 | 68 | 68 | 72 |
| T | 960 | 960 | 960 | 807 | 807 | 960 | 960 | 960 | 960 | 960 | 960 | 960 | 960 | 960 | 960 |
| H-133 GROUND COMMUNICATION UNIT | | | | | | | | | | | | | | | |
| OASLA* | 87 | 86 | 85 | 94 | 93 | 84 | 92 | 88 | 85 | 82 | 83 | 81 | 83 | 82 | 86 |
| T | 285 | 339 | 404 | 85 | 101 | 480 | 120 | 240 | 404 | 679 | 571 | 607 | 571 | 679 | 339 |
| COMMUNICATION | | | | | | | | | | | | | | | |
| PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB) | | | | | | | | | | | | | | | |
| PSIL | 102 | 101 | 100 | 107 | 107 | 99 | 107 | 104 | 100 | 98 | 98 | 96 | 97 | 97 | 100 |
| ANNOUNCE | | | | | | | | | | | | | | | |
| PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB) | | | | | | | | | | | | | | | |
| TONE CORRECTION (C IN DB) | | | | | | | | | | | | | | | |
| PNLT | 129 | 128 | 128 | 135 | 134 | 129 | 133 | 129 | 127 | 126 | 127 | 122 | 124 | 123 | 127 |
| C | 8 | 8 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 3 | 3 | 0 | 0 | 0 | 0 |

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.
P ADDITIONAL EAR PROTECTION REQUIRED.

TABLE 4
TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

C-5A Aircraft, Ground Runups, Altus AFB OK
14 June 1978
Tail #690025

Aircraft Engine Operation

| | |
|----------------------|---|
| Idle | Engine Nos. 2 and 3 Only 64 % RPM NC (Core Speed) 23 % RPM NF (Fan Speed) 410 C TIT (Turbine Inlet Temperature) No Register EPR (Engine Pressure Ratio) 1200 LBS/HR FF (Fuel Flow) |
| 1.6 EPR Runup | Engine Nos. 2 and 3 Only 77 % RPM NC 42 % RPM NF 450 C TIT 1.60 EPR 2200 LBS/HR FF |
| 2.5 EPR Runup | Engine Nos. 2 and 3 Only 85 % RPM NC 63 % RPM NF 570 C TIT 2.50 EPR 4800 LBS/HR FF |
| 3.5 EPR Runup | Engine Nos. 2 and 3 Only 90 % RPM NC 78 % RPM NF 710 C TIT 3.50 EPR 8000 LBS/HR FF |
| Takeoff Rated Thrust | Engine Nos. 2 and 3 Only 96 % RPM NC 90 % RPM NF 810 C TIT 4.40 EPR 11000 LBS/HR FF |

Meteorology

| | |
|--------------|-------------------|
| Temperature | 27.8 C |
| Bar Pressure | 0.727 M Hg |
| Rel Humidity | 54 % |
| Wind — Speed | 3.6 M/Sec (7 Kts) |
| — Direction | 160 Deg |

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | IDENTIFICATION: | | | | | | | | | | | | | | | | | | |
|--|-----------------------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 5 | 1/3 OCTAVE BAND | | | | | | | | | | | | | | | | | | | |
| | DISTANCE = 100 METERS | | | | | | | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | | | | | | | | | |
| (OPERATION:) | | | | | | | | | | | | | | | | | | | | |
| (IDLE, 64% RPM) | | | | | | | | | | | | | | | | | | | | |
| (TWO ENGINES (INBOARD)) | | | | | | | | | | | | | | | | | | | | |
| (FREE FLOW) | | | | | | | | | | | | | | | | | | | | |
| C-5A AIRCRAFT | | | | | | | | | | | | | | | | | | | | |
| TF39-GE-1 | | | | | | | | | | | | | | | | | | | | |
| FAR FIELD NOISE | | | | | | | | | | | | | | | | | | | | |
| FREQ | | ANGLE (DEGREES) | | | | | | | | | | | | | | | | | | |
| (HZ) | | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| | | | | | | | | | 71< | 70< | 69< | 71< | 69< | 68< | 67< | | 68< | | 74< | |
| 25 | | | | | | | | | 71< | 64< | 66< | 67< | 65< | 66< | 68< | | 71< | 68< | 73< | |
| 31.5 | | 64< | 63< | 64< | 64< | 65< | | 63< | 71< | 64< | 66< | 67< | 65< | 66< | 68< | 65< | 71< | 66< | 69< | |
| 40 | | 71< | 70< | 74 | 68< | 73 | 70< | 73 | 77 | 71< | 76 | 77 | 78 | 74 | 75 | 78 | 75 | 78 | 71< | |
| 50 | | 64< | 64< | 70< | 71 | 69< | 65< | 67< | 72 | 63< | 67< | 64< | 65< | 64< | 69< | 65< | 67< | 67< | 65< | |
| 63 | | 75< | 69< | 66< | 67< | 72< | 73< | 75< | 76< | 75< | 78 | 80 | 82 | 74< | 76< | 77 | 75< | 68< | | |
| 80 | | 66< | | | | | | | 71< | 66< | 65< | 66< | 66< | 68< | 66< | 66< | 67< | | | |
| 100 | | 64< | 64< | 64< | 61< | 63< | 62< | 63< | 70 | 63< | 64< | 63< | 62< | 66< | 63< | 67< | 63< | 67< | 59< | |
| 125 | | 68 | 68 | 65 | 63 | 67 | 66 | 68 | 67 | 67 | 66 | 66 | 66 | 68 | 64 | 64 | 64 | 64 | 58< | |
| 160 | | 67 | 67 | 67 | 64 | 66 | 65 | 66 | 69 | 68 | 69 | 66 | 66 | 64 | 65 | 62 | 64 | 62 | 54< | |
| 200 | | 72 | 72 | 71 | 66 | 67 | 66 | 65 | 68 | 70 | 69 | 66 | 65 | 63 | 66 | 61 | 62 | 62 | 57< | |
| 250 | | 70 | 70 | 70 | 64 | 66 | 64 | 63 | 69 | 69 | 68 | 64 | 61 | 61 | 64 | 64 | 63 | 61 | 58 | |
| 315 | | 80 | 74 | 74 | 75 | 73 | 76 | 72 | 76 | 77 | 77 | 75 | 72 | 76 | 77 | 81 | 77 | 73 | 71 | |
| 400 | | 81 | 75 | 72 | 69 | 71 | 71 | 70 | 70 | 72 | 70 | 69 | 67 | 71 | 72 | 74 | 76 | 71 | 73 | |
| 500 | | 75 | 73 | 72 | 68 | 71 | 70 | 71 | 67 | 67 | 64 | 64 | 65 | 65 | 68 | 68 | 66 | 63 | 60 | |
| 630 | | 79 | 80 | 77 | 75 | 77 | 74 | 79 | 71 | 75 | 69 | 71 | 73 | 75 | 76 | 72 | 71 | 69 | 64 | |
| 800 | | 79 | 77 | 76 | 72 | 74 | 73 | 74 | 69 | 69 | 67 | 69 | 70 | 71 | 72 | 71 | 71 | 68 | 65 | |
| 1000 | | 79 | 79 | 77 | 76 | 79 | 81 | 84 | 75 | 75 | 77 | 73 | 77 | 79 | 80 | 76 | 74 | 70 | 66 | |
| 1250 | | 82 | 81 | 79 | 75 | 77 | 76 | 74 | 74 | 74 | 71 | 69 | 73 | 72 | 74 | 74 | 71 | 68 | 65 | |
| 1600 | | 81 | 79 | 78 | 74 | 76 | 75 | 73 | 71 | 68 | 68 | 67 | 72 | 71 | 71 | 72 | 70 | 68 | 65 | |
| 2000 | | 83 | 81 | 78 | 75 | 76 | 77 | 74 | 73 | 69 | 68 | 68 | 71 | 71 | 72 | 73 | 69 | 67 | 65 | |
| 2500 | | 86 | 85 | 82 | 77 | 80 | 80 | 77 | 77 | 77 | 71 | 70 | 71 | 74 | 73 | 74 | 77 | 72 | 70 | 67 |
| 3150 | | 78 | 77 | 75 | 72 | 75 | 76 | 73 | 72 | 67 | 67 | 67 | 70 | 70 | 70 | 71 | 68 | 66 | 63 | |
| 4000 | | 74 | 72 | 70 | 68 | 69 | 71 | 68 | 67 | 64 | 64 | 63 | 67 | 66 | 66 | 68 | 64 | 62 | 60 | |
| 5000 | | 72 | 69 | 67 | 66 | 66 | 68 | 65 | 64 | 62 | 62 | 62 | 63 | 63 | 63 | 64 | 62 | 59 | 57 | |
| 6380 | | 66 | 65 | 63 | 63 | 64 | 64 | 63 | 64 | 68 | 66 | 66 | 66 | 65 | 66 | 66 | 66 | 63 | 60 | |
| 8000 | | | | | | | | | | | | | | | | | | | | |
| 10000 | | | | | | | | | | | | | | | | | | | | |
| OVERALL | | 92 | 90 | 88 | 85 | 87 | 88 | 88 | 86 | 85 | 85 | 85 | 86 | 87 | 86 | 87 | 85 | 83 | 82 | |
| < LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE. | | | | | | | | | | | | | | | | | | | | |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------------|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | IDENTIFICATIONS: | | | | | | | | | | | | | | | | | | | |
| 5 | 1/3 OCTAVE BAND | OMEGA 1.4 | | | | | | | | | | | | | | | | | | | |
| | DISTANCE = 100 METERS | TEST 78-015-001 | | | | | | | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: | | METEOROLOGY: | | | | | | | | | | | | | | | | | | | |
| (C-5A AIRCRAFT | | TEMP = 20 C | | | | | | | | | | | | | | | | | | | |
| (TF39-GE-1 | | BAR PRESS = .727 M HG | | | | | | | | | | | | | | | | | | | |
| (FAR FIELD NOISE | | REL HUMID = 54 % | | | | | | | | | | | | | | | | | | | |
| | | PAGE 2 | | | | | | | | | | | | | | | | | | | |
| FREQ (HZ) | | ANGLE (DEGREES) | | | | | | | | | | | | | | | | | | | |
| | | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | |
| 25 | 70< | 70< | 71< | 71< | 70< | 72< | 73< | 75< | 76< | 72< | 73< | 75< | 74< | 72< | 74< | 73< | 73< | 73< | 73< | 73< | |
| 31.5 | 73< | 70< | 71< | 73< | 75< | 76< | 76< | 75< | 76< | 79 | 80 | 81 | 79 | 77< | 76< | 75< | 76< | 72< | 72< | 72< | |
| 40 | 74< | 73< | 74 | 76 | 79 | 76 | 76 | 78 | 77 | 81 | 81 | 81 | 78 | 78 | 76 | 76 | 78 | 73< | 73< | 73< | |
| 50 | 82 | 81 | 84 | 77 | 82 | 78 | 86 | 86 | 83 | 80 | 80 | 80 | 87 | 89 | 84 | 90 | 87 | 88 | 88 | 88 | |
| 63 | 74 | 75 | 75 | 73 | 75 | 73 | 78 | 77 | 74 | 73 | 74 | 77 | 78 | 75 | 80 | 77 | 77 | 77 | 77 | 77 | |
| 80 | 69< | 69< | 70< | 69< | 69< | 71< | 71< | 70< | 70< | 68< | 68< | 68< | 69< | 70< | 69< | 71< | 69< | 66< | 66< | 66< | |
| 100 | 75< | 76 | 78 | 73< | 76 | 81 | 76 | 73< | 84 | 82 | 79 | 75< | 82 | 82 | 82 | 77 | 75< | 69< | 69< | 69< | |
| 125 | 69< | 69< | 70 | 67< | 68< | 68< | 67< | 67< | 70 | 69 | 68< | 67< | 66 | 66 | 66 | 65 | 66 | 66< | 66< | 66< | |
| 160 | 72 | 71 | 70 | 68 | 68 | 69 | 70 | 68 | 68 | 68 | 68 | 67 | 66 | 66 | 66 | 65 | 64 | 65 | 65 | 65 | |
| 200 | 73 | 72 | 72 | 71 | 74 | 73 | 70 | 72 | 68 | 69 | 68 | 67 | 66 | 66 | 66 | 64 | 62 | 62 | 62 | 62 | |
| 250 | 74 | 71 | 71 | 66 | 70 | 68 | 68 | 69 | 70 | 70 | 68 | 67 | 66 | 66 | 65 | 64 | 61 | 61 | 61 | 61 | |
| 315 | 77 | 72 | 74 | 66 | 71 | 69 | 69 | 69 | 69 | 70 | 68 | 67 | 65 | 64 | 66 | 64 | 62 | 61 | 61 | 61 | |
| 400 | 80 | 74 | 74 | 67 | 72 | 69 | 69 | 68 | 68 | 68 | 65 | 65 | 63 | 65 | 69 | 66 | 65 | 62 | 62 | 62 | |
| 500 | 84 | 81 | 85 | 81 | 83 | 88 | 85 | 81 | 85 | 83 | 82 | 82 | 85 | 87 | 86 | 82 | 80 | 79 | 79 | 79 | |
| 630 | 89 | 90 | 96 | 88 | 92 | 98 | 96 | 89 | 95 | 93 | 89 | 89 | 93 | 95 | 96 | 94 | 90 | 85 | 85 | 85 | |
| 800 | 87 | 84 | 88 | 83 | 85 | 90 | 90 | 83 | 80 | 80 | 79 | 78 | 78 | 78 | 79 | 77 | 74 | 73 | 73 | 73 | |
| 1000 | 91 | 87 | 90 | 86 | 85 | 84 | 85 | 82 | 79 | 80 | 79 | 80 | 81 | 82 | 80 | 78 | 75 | 75 | 75 | 75 | |
| 1250 | 92 | 90 | 95 | 91 | 93 | 90 | 92 | 89 | 87 | 89 | 87 | 88 | 89 | 88 | 86 | 83 | 80 | 80 | 80 | 80 | |
| 1600 | 88 | 87 | 88 | 85 | 85 | 87 | 87 | 84 | 81 | 80 | 82 | 84 | 84 | 83 | 80 | 77 | 76 | 76 | 76 | 76 | |
| 2000 | 89 | 89 | 90 | 85 | 86 | 87 | 88 | 85 | 83 | 82 | 83 | 86 | 85 | 85 | 85 | 83 | 80 | 76 | 76 | 76 | |
| 2500 | 87 | 86 | 88 | 85 | 85 | 86 | 87 | 83 | 81 | 80 | 81 | 84 | 84 | 84 | 84 | 82 | 78 | 76 | 76 | 76 | |
| 3150 | 86 | 87 | 86 | 83 | 83 | 85 | 84 | 82 | 80 | 78 | 78 | 81 | 82 | 80 | 78 | 74 | 72 | 72 | 72 | 72 | |
| 4000 | 84 | 83 | 84 | 80 | 82 | 82 | 82 | 83 | 80 | 79 | 77 | 77 | 80 | 80 | 78 | 76 | 73 | 71 | 71 | 71 | |
| 5000 | 82 | 80 | 82 | 79 | 79 | 80 | 80 | 78 | 75 | 75 | 74 | 77 | 77 | 78 | 76 | 73 | 70 | 68 | 68 | 68 | |
| 6300 | 78 | 76 | 77 | 74 | 75 | 75 | 76 | 74 | 73 | 73 | 73 | 71 | 73 | 74 | 73 | 70 | 68 | 64 | 64 | 64 | |
| 8000 | 99 | 98 | 101 | 96 | 98 | 98 | 100 | 100 | 96 | 97 | 96 | 94 | 97 | 98 | 98 | 97 | 94 | 92 | 92 | 92 | |
| 10000 | OVERALL | | | | | | | | | | | | | | | | | | | | |
| < LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE. | | | | | | | | | | | | | | | | | | | | | |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| | | | | | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | | | | | | | | | | | |
| 1/3 OCTAVE BAND | | | | | | | | | | | | | | | | | | | |
| DISTANCE = 100 METERS | | | | | | | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | | | | | | | | |
| (OPERATION: | | | | | | | | | | | | | | | | | | | |
| (85% RPM, 2.5 EPR | | | | | | | | | | | | | | | | | | | |
| (TWO ENGINES (INBOARD) | | | | | | | | | | | | | | | | | | | |
| (FREE FLOW | | | | | | | | | | | | | | | | | | | |
|) METEOROLOGY: | | | | | | | | | | | | | | | | | | | |
|) TEMP = 28 C | | | | | | | | | | | | | | | | | | | |
|) BAR PRESS = .727 M HG | | | | | | | | | | | | | | | | | | | |
|) REL HUMID = 54 % | | | | | | | | | | | | | | | | | | | |
|) PAGE 2 | | | | | | | | | | | | | | | | | | | |
|) IDENTIFICATION: | | | | | | | | | | | | | | | | | | | |
|) OMEGA 1.4 | | | | | | | | | | | | | | | | | | | |
|) TEST 78-015-001 | | | | | | | | | | | | | | | | | | | |
|) RUN 03 | | | | | | | | | | | | | | | | | | | |
|) 24 JAN 79 | | | | | | | | | | | | | | | | | | | |
|) ANGLE (DEGREES) | | | | | | | | | | | | | | | | | | | |
| FREQ | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| (HZ) | | | | | | | | | | | | | | | | | | | |
| 25 | 74< | 74< | 74< | 75< | 76< | 75< | 76< | 78< | 81< | 81< | 83 | 82< | 85 | 85 | 87 | 87 | 87 | 85 | |
| 31.5 | 74< | 74< | 75< | 75< | 76< | 78< | 80 | 81 | 83 | 83 | 84 | 84 | 85 | 85 | 87 | 87 | 87 | 84 | |
| 40 | 74< | 76< | 75< | 78< | 79 | 80 | 81 | 80 | 84 | 85 | 86 | 88 | 88 | 88 | 88 | 88 | 89 | 85 | |
| 50 | 78 | 78 | 77 | 79 | 83 | 82 | 80 | 82 | 86 | 85 | 85 | 84 | 84 | 86 | 86 | 87 | 87 | 82 | |
| 63 | 80 | 78 | 80 | 81 | 81 | 85 | 85 | 83 | 82 | 84 | 84 | 86 | 86 | 86 | 85 | 84 | 81 | | |
| 80 | 80 | 80 | 80 | 80 | 81 | 84 | 85 | 82 | 81 | 83 | 84 | 86 | 85 | 86 | 86 | 84 | 80 | | |
| 100 | 79 | 80 | 79 | 81 | 81 | 83 | 82 | 81 | 81 | 81 | 79 | 84 | 83 | 85 | 86 | 84 | 79 | | |
| 125 | 79 | 80 | 79 | 80 | 80 | 81 | 81 | 80 | 82 | 77 | 78 | 79 | 81 | 83 | 85 | 82 | 78 | | |
| 160 | 77 | 79 | 78 | 77 | 78 | 77 | 79 | 78 | 80 | 79 | 78 | 79 | 79 | 81 | 81 | 79 | 75 | | |
| 200 | 75 | 77 | 75 | 76 | 77 | 76 | 77 | 76 | 75 | 75 | 76 | 76 | 75 | 74 | 75 | 75 | 70 | | |
| 250 | 73 | 75 | 74 | 76 | 77 | 77 | 77 | 76 | 76 | 75 | 75 | 75 | 74 | 74 | 75 | 71 | 68 | | |
| 315 | 73 | 75 | 72 | 76 | 78 | 78 | 78 | 75 | 76 | 75 | 74 | 74 | 72 | 73 | 74 | 69 | 68 | | |
| 400 | 74 | 75 | 74 | 76 | 78 | 77 | 77 | 77 | 77 | 73 | 72 | 72 | 72 | 71 | 72 | 68 | 68 | | |
| 500 | 76 | 74 | 74 | 77 | 78 | 77 | 76 | 75 | 73 | 72 | 71 | 71 | 72 | 71 | 71 | 68 | 66 | | |
| 630 | 77 | 77 | 76 | 79 | 80 | 78 | 77 | 77 | 75 | 73 | 72 | 73 | 74 | 73 | 72 | 69 | 67 | | |
| 800 | 81 | 82 | 82 | 84 | 85 | 81 | 81 | 84 | 81 | 78 | 80 | 81 | 79 | 77 | 76 | 73 | 71 | | |
| 1000 | 84 | 84 | 84 | 86 | 89 | 84 | 86 | 89 | 86 | 83 | 85 | 85 | 83 | 80 | 80 | 77 | 74 | | |
| 1250 | 92 | 92 | 92 | 94 | 95 | 90 | 92 | 91 | 91 | 91 | 91 | 94 | 95 | 93 | 92 | 86 | 84 | | |
| 1600 | 99 | 99 | 99 | 100 | 103 | 97 | 100 | 99 | 99 | 98 | 94 | 98 | 101 | 100 | 100 | 95 | 93 | | |
| 2000 | 91 | 92 | 91 | 93 | 93 | 94 | 94 | 97 | 95 | 93 | 91 | 93 | 92 | 91 | 90 | 85 | 83 | | |
| 2500 | 93 | 94 | 92 | 92 | 92 | 93 | 94 | 93 | 93 | 92 | 91 | 93 | 93 | 91 | 89 | 84 | 82 | | |
| 3150 | 92 | 94 | 93 | 95 | 97 | 96 | 96 | 96 | 95 | 94 | 93 | 98 | 98 | 97 | 96 | 92 | 89 | | |
| 4000 | 97 | 93 | 91 | 92 | 94 | 93 | 93 | 95 | 93 | 93 | 92 | 95 | 93 | 93 | 91 | 85 | 84 | | |
| 5000 | 88 | 90 | 88 | 90 | 91 | 91 | 92 | 92 | 91 | 91 | 89 | 92 | 91 | 91 | 90 | 85 | 83 | | |
| 6300 | 88 | 88 | 86 | 88 | 89 | 90 | 90 | 90 | 89 | 90 | 87 | 90 | 90 | 89 | 87 | 83 | 81 | | |
| 8000 | 85 | 85 | 83 | 84 | 85 | 86 | 88 | 88 | 88 | 87 | 84 | 88 | 87 | 87 | 85 | 80 | 79 | | |
| 10000 | 80 | 80 | 78 | 79 | 80 | 82 | 82 | 83 | 83 | 82 | 79 | 83 | 82 | 81 | 79 | 75 | 73 | | |
| OVERALL | 102 | 103 | 102 | 104 | 106 | 103 | 105 | 105 | 104 | 103 | 101 | 105 | 105 | 104 | 104 | 100 | 97 | | |
| < LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE | | | | | | | | | | | | | | | | | | | |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| | | | | | | | | | | | | | | | | | | |
|---|--|------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | IDENTIFICATION: | | | | | | | | | | | | | | | | |
| 5 | 1/3 OCTAVE BAND |) OMEGA 1.4 | | | | | | | | | | | | | | | | |
| | DISTANCE = 100 METERS |) TEST 78-015-001 | | | | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: | |) RUN 84 | | | | | | | | | | | | | | | | |
| (C-5A AIRCRAFT | |) METEOROLOGY:) TEMP = 28 C | | | | | | | | | | | | | | | | |
| (TF39-GE-1 | |) BAR PRESS = .727 M HG | | | | | | | | | | | | | | | | |
| (FAR FIELD NOISE | |) REL HUMID = 54 % | | | | | | | | | | | | | | | | |
| | |) PAGE 2 | | | | | | | | | | | | | | | | |
| FREQ (HZ) | | ANGLE (DEGREES) | | | | | | | | | | | | | | | | |
| | 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 | | | | | | | | | | | | | | | | | |
| 25 | 79< 80< 78< 82< 83 81< 82< 86 87 87 89 90 92 93 95 97 98 92 | | | | | | | | | | | | | | | | | |
| 31.5 | 81 81 81 83 83 84 84 84 88 89 89 90 92 93 95 98 98 93 | | | | | | | | | | | | | | | | | |
| 40 | 81 82 82 82 84 85 86 88 89 89 91 92 95 94 98 98 92 | | | | | | | | | | | | | | | | | |
| 50 | 82 82 82 84 86 84 85 88 89 90 90 92 93 95 95 97 90 | | | | | | | | | | | | | | | | | |
| 63 | 84 82 84 85 84 85 86 88 88 89 91 92 93 95 94 88 | | | | | | | | | | | | | | | | | |
| 80 | 86 84 85 85 85 88 88 87 87 87 90 91 93 93 95 92 86 | | | | | | | | | | | | | | | | | |
| 100 | 88 88 86 88 88 89 88 87 88 87 89 91 92 94 94 91 84 | | | | | | | | | | | | | | | | | |
| 125 | 86 86 86 85 88 88 86 86 91 87 86 88 89 90 91 93 89 83 | | | | | | | | | | | | | | | | | |
| 160 | 86 86 88 84 85 86 84 86 87 88 89 88 89 90 90 89 86 | | | | | | | | | | | | | | | | | |
| 200 | 79 81 82 82 84 84 84 84 84 85 84 85 86 87 85 84 80 | | | | | | | | | | | | | | | | | |
| 250 | 81 81 82 82 84 85 85 85 83 85 83 84 83 84 83 82 79 76 | | | | | | | | | | | | | | | | | |
| 315 | 79 84 82 79 83 83 82 84 82 81 81 81 80 81 79 76 75 | | | | | | | | | | | | | | | | | |
| 400 | 79 81 82 80 85 84 86 84 81 84 80 79 80 81 79 76 75 | | | | | | | | | | | | | | | | | |
| 500 | 79 80 80 79 80 82 80 80 81 78 79 78 81 81 79 76 75 | | | | | | | | | | | | | | | | | |
| 630 | 81 80 82 80 82 83 82 80 80 80 76 79 79 81 79 75 74 | | | | | | | | | | | | | | | | | |
| 800 | 83 82 85 84 84 85 85 82 83 80 80 81 82 81 79 76 75 | | | | | | | | | | | | | | | | | |
| 1000 | 88 88 90 89 89 90 91 90 89 85 88 89 87 85 83 78 78 | | | | | | | | | | | | | | | | | |
| 1250 | 94 92 94 93 94 95 95 95 94 89 91 94 92 90 88 84 83 | | | | | | | | | | | | | | | | | |
| 1600 | 100 99 100 97 97 100 100 100 100 98 98 100 102 102 100 97 91 89 | | | | | | | | | | | | | | | | | |
| 2000 | 107 104 105 106 102 102 105 107 103 103 103 103 106 107 106 104 100 98 | | | | | | | | | | | | | | | | | |
| 2500 | 95 97 96 98 98 97 98 97 97 94 93 93 95 95 94 92 87 85 | | | | | | | | | | | | | | | | | |
| 3150 | 97 97 99 98 100 100 100 100 100 97 98 99 98 96 93 88 87 | | | | | | | | | | | | | | | | | |
| 4000 | 98 99 97 97 99 99 101 102 101 99 99 100 101 100 99 94 93 | | | | | | | | | | | | | | | | | |
| 5000 | 94 95 96 94 96 97 98 98 98 94 95 96 96 94 91 87 86 | | | | | | | | | | | | | | | | | |
| 6300 | 93 92 93 91 94 94 95 96 96 92 93 94 94 94 91 87 85 | | | | | | | | | | | | | | | | | |
| 8000 | 90 90 91 89 91 92 93 94 95 90 91 92 93 91 89 83 82 | | | | | | | | | | | | | | | | | |
| 10000 | 85 85 87 85 87 87 89 89 89 86 86 88 88 87 84 80 77 | | | | | | | | | | | | | | | | | |
| OVERALL | 109 108 109 109 108 108 110 110 109 107 108 110 110 110 109 107 103 | | | | | | | | | | | | | | | | | |
| < LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE | | | | | | | | | | | | | | | | | | |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| | | | | | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|-----|-----|
| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) | | | | | | | | | | | | | | | | | IDENTIFICATIONS | | |
| 1/3 OCTAVE BAND | | | | | | | | | | | | | | | | | | | |
| DISTANCE = 100 METERS | | | | | | | | | | | | | | | | | OMEGA 1.4 | | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | | | | | | TEST 78-015-001 | | |
| (OPERATION: | | | | | | | | | | | | | | | | | RUN 05 | | |
| (MAXIMUM POWER | | | | | | | | | | | | | | | | | | | |
| (96% RPM, 4.40 EPR | | | | | | | | | | | | | | | | | 16 SEP 78 | | |
| (TWO ENGINES (INBOARD) | | | | | | | | | | | | | | | | | | | |
| (FREE FLOW | | | | | | | | | | | | | | | | | PAGE 2 | | |
| METEOROLOGY: | | | | | | | | | | | | | | | | | | | |
| TEMP = 28 C | | | | | | | | | | | | | | | | | | | |
| BAR PRESS = .727 M HG | | | | | | | | | | | | | | | | | | | |
| REL HUMID = 54 % | | | | | | | | | | | | | | | | | | | |
| ANGLE (DEGREES) | | | | | | | | | | | | | | | | | | | |
| FREQ | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| (HZ) | | | | | | | | | | | | | | | | | | | |
| 25 | 85 | 84 | 84 | 85 | 87 | 86 | 85 | 89 | 91 | 90 | 92 | 93 | 95 | 100 | 103 | 103 | 98 | | |
| 31.5 | 85 | 84 | 84 | 86 | 85 | 88 | 87 | 91 | 93 | 93 | 95 | 96 | 97 | 101 | 105 | 105 | 97 | | |
| 40 | 85 | 85 | 85 | 86 | 87 | 90 | 89 | 92 | 94 | 92 | 94 | 96 | 99 | 101 | 106 | 106 | 96 | | |
| 50 | 86 | 86 | 86 | 88 | 89 | 89 | 90 | 92 | 93 | 93 | 94 | 96 | 98 | 102 | 103 | 104 | 97 | | |
| 63 | 87 | 86 | 87 | 87 | 88 | 90 | 89 | 89 | 90 | 92 | 94 | 96 | 99 | 100 | 102 | 103 | 93 | | |
| 80 | 89 | 88 | 89 | 88 | 89 | 90 | 89 | 90 | 90 | 91 | 94 | 95 | 97 | 99 | 100 | 100 | 92 | | |
| 100 | 92 | 93 | 91 | 90 | 92 | 92 | 91 | 93 | 91 | 93 | 93 | 96 | 97 | 99 | 99 | 98 | 89 | | |
| 125 | 91 | 88 | 88 | 89 | 91 | 90 | 89 | 90 | 92 | 91 | 91 | 93 | 96 | 97 | 97 | 94 | 86 | | |
| 160 | 88 | 86 | 87 | 90 | 92 | 94 | 89 | 90 | 96 | 93 | 94 | 95 | 97 | 98 | 97 | 93 | 85 | | |
| 200 | 85 | 85 | 85 | 86 | 90 | 90 | 89 | 90 | 90 | 90 | 90 | 92 | 93 | 94 | 90 | 87 | 81 | | |
| 250 | 85 | 85 | 84 | 85 | 89 | 88 | 88 | 88 | 89 | 88 | 88 | 89 | 88 | 90 | 88 | 85 | 80 | | |
| 315 | 84 | 82 | 83 | 84 | 88 | 88 | 86 | 85 | 86 | 86 | 86 | 86 | 86 | 87 | 85 | 82 | 79 | | |
| 400 | 84 | 83 | 83 | 83 | 89 | 88 | 87 | 88 | 89 | 85 | 84 | 84 | 86 | 85 | 84 | 83 | 79 | | |
| 500 | 86 | 84 | 83 | 84 | 86 | 88 | 88 | 89 | 90 | 88 | 87 | 85 | 88 | 87 | 85 | 83 | 78 | | |
| 630 | 86 | 83 | 83 | 85 | 88 | 90 | 95 | 91 | 92 | 87 | 85 | 87 | 87 | 87 | 84 | 82 | 77 | | |
| 800 | 90 | 87 | 85 | 86 | 88 | 89 | 92 | 90 | 90 | 86 | 84 | 86 | 87 | 86 | 84 | 81 | 77 | | |
| 1000 | 91 | 91 | 88 | 90 | 92 | 92 | 94 | 94 | 90 | 90 | 88 | 89 | 89 | 87 | 85 | 82 | 78 | | |
| 1250 | 97 | 95 | 97 | 94 | 99 | 101 | 101 | 100 | 101 | 97 | 95 | 97 | 97 | 94 | 91 | 88 | 85 | | |
| 1600 | 99 | 101 | 98 | 101 | 103 | 98 | 99 | 97 | 97 | 96 | 96 | 97 | 96 | 94 | 91 | 87 | 84 | | |
| 2000 | 112 | 109 | 106 | 111 | 111 | 109 | 111 | 106 | 109 | 106 | 104 | 108 | 107 | 105 | 102 | 97 | 95 | | |
| 2500 | 100 | 99 | 98 | 103 | 103 | 102 | 103 | 101 | 102 | 97 | 98 | 101 | 102 | 101 | 99 | 96 | 92 | | |
| 3150 | 90 | 97 | 96 | 98 | 100 | 100 | 101 | 101 | 100 | 98 | 99 | 100 | 98 | 96 | 94 | 90 | 87 | | |
| 4000 | 104 | 102 | 98 | 101 | 102 | 102 | 104 | 105 | 104 | 102 | 103 | 105 | 104 | 100 | 97 | 94 | 91 | | |
| 5000 | 97 | 96 | 93 | 97 | 98 | 98 | 99 | 99 | 100 | 97 | 98 | 99 | 98 | 97 | 94 | 91 | 88 | | |
| 6300 | 97 | 96 | 92 | 97 | 98 | 97 | 98 | 99 | 100 | 97 | 97 | 99 | 97 | 95 | 92 | 89 | 86 | | |
| 8000 | 94 | 92 | 90 | 94 | 95 | 95 | 96 | 96 | 97 | 94 | 94 | 96 | 95 | 93 | 90 | 87 | 84 | | |
| 10000 | 89 | 88 | 85 | 90 | 91 | 91 | 92 | 93 | 93 | 91 | 90 | 92 | 91 | 89 | 86 | 84 | 80 | | |
| OVERALL | 113 | 111 | 109 | 113 | 113 | 113 | 114 | 112 | 113 | 110 | 110 | 112 | 112 | 112 | 113 | 112 | 105 | | |
| LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE. | | | | | | | | | | | | | | | | | | | |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

C-54 AIRCRAFT
TF59-GE-1
FAR FIELD NOISE

OPERATION:

772 RPM, 1.6 EPR
TWO ENGINES (INBOARD)
FREE FLOW

METEOROLOGY:

TEMP = 15 C
BAR PRESS = .750 M HG
REL HUMID = 70 %

IDENTIFICATION:

OMEGA 1.4
TEST 78-015-001
RUN 02
18 SEP 78
PAGE 6

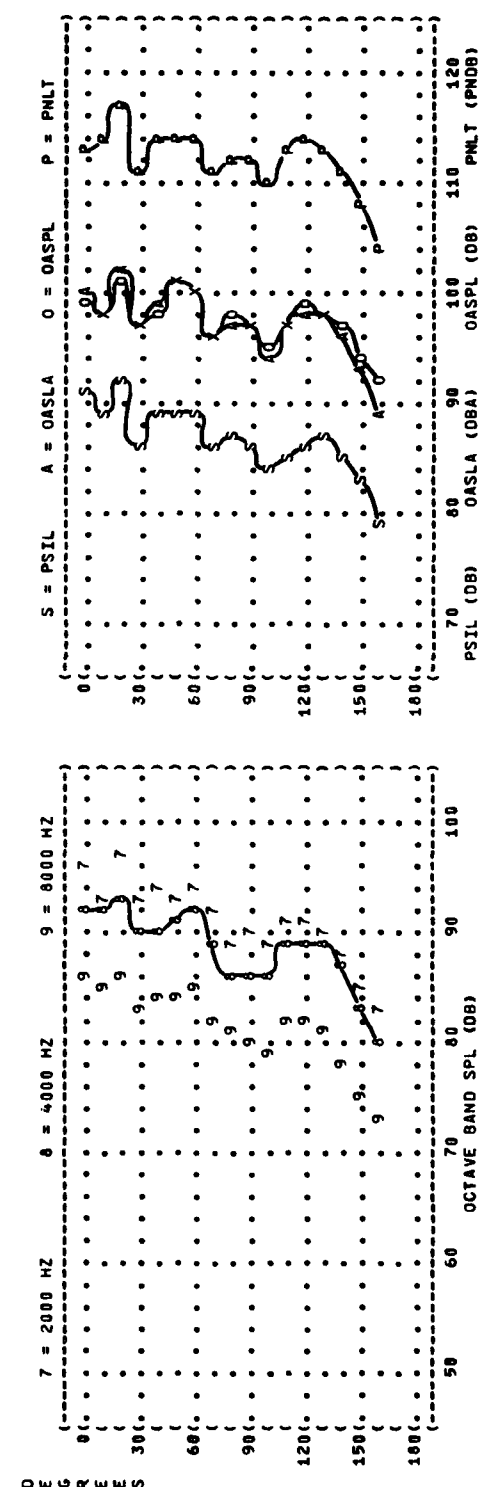
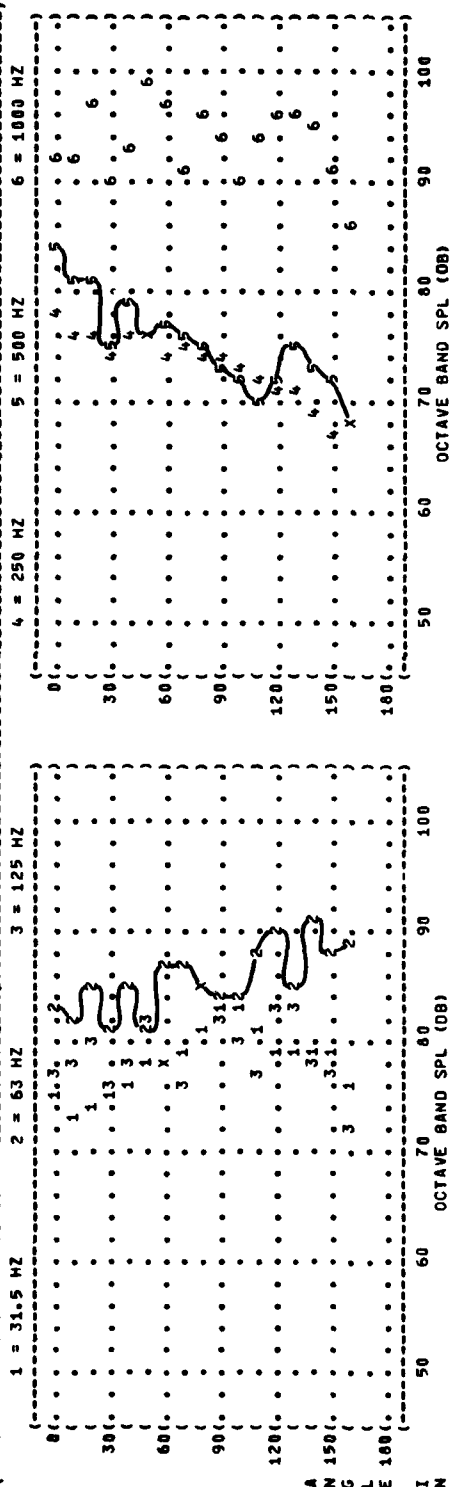


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

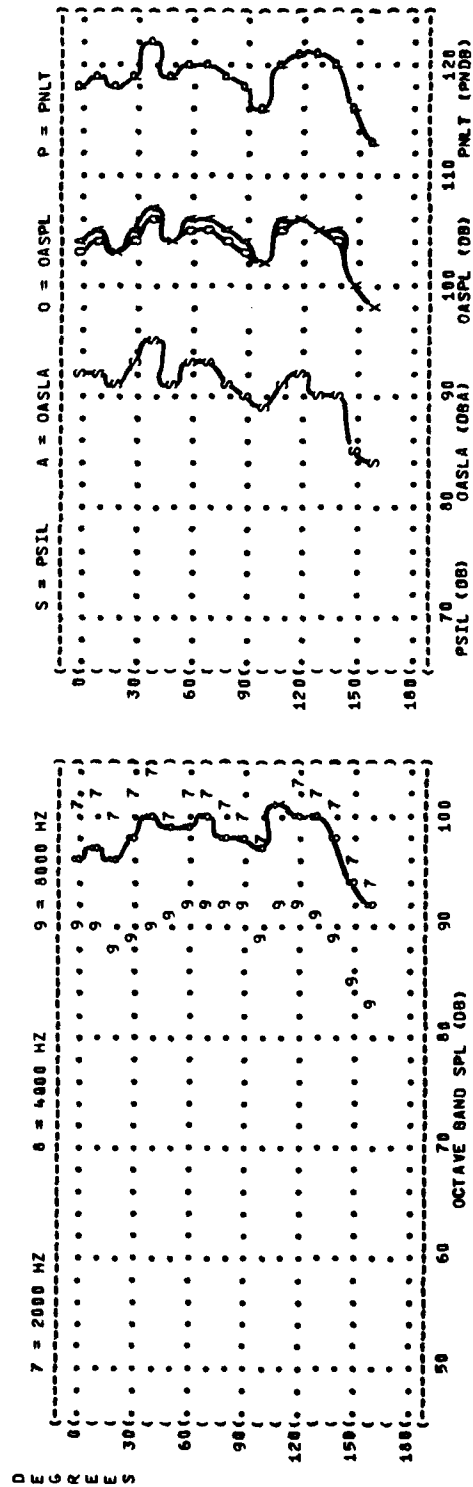
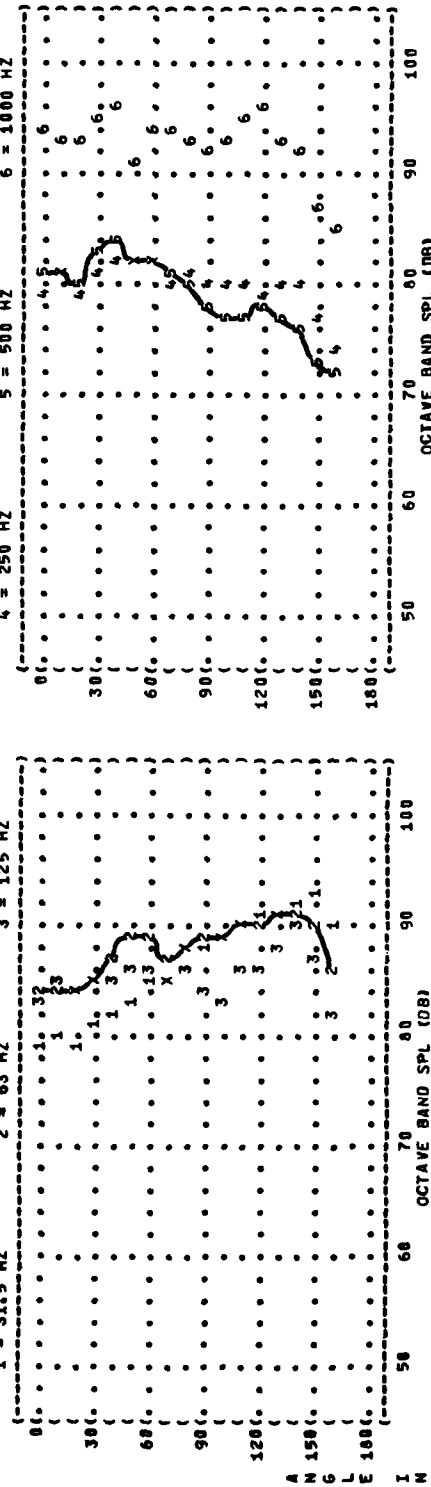
3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT: C-5A AIRCRAFT
TF39-GE-1
FAR FIELD NOISE

OPERATION: 85% RPM, 2.5 EPR
TWO ENGINES (INBOARD)
FREE FLOW

METEOROLOGY: TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION: OMEGA 1.4
TEST 78-015-001
RUN 03
24 JAN 79
PAGE 6



PSIL (DB) 70 80 90 100 110 120

OASPL (DB) 70 80 90 100 110 120

PNLT (PNDB) 70 80 90 100 110 120

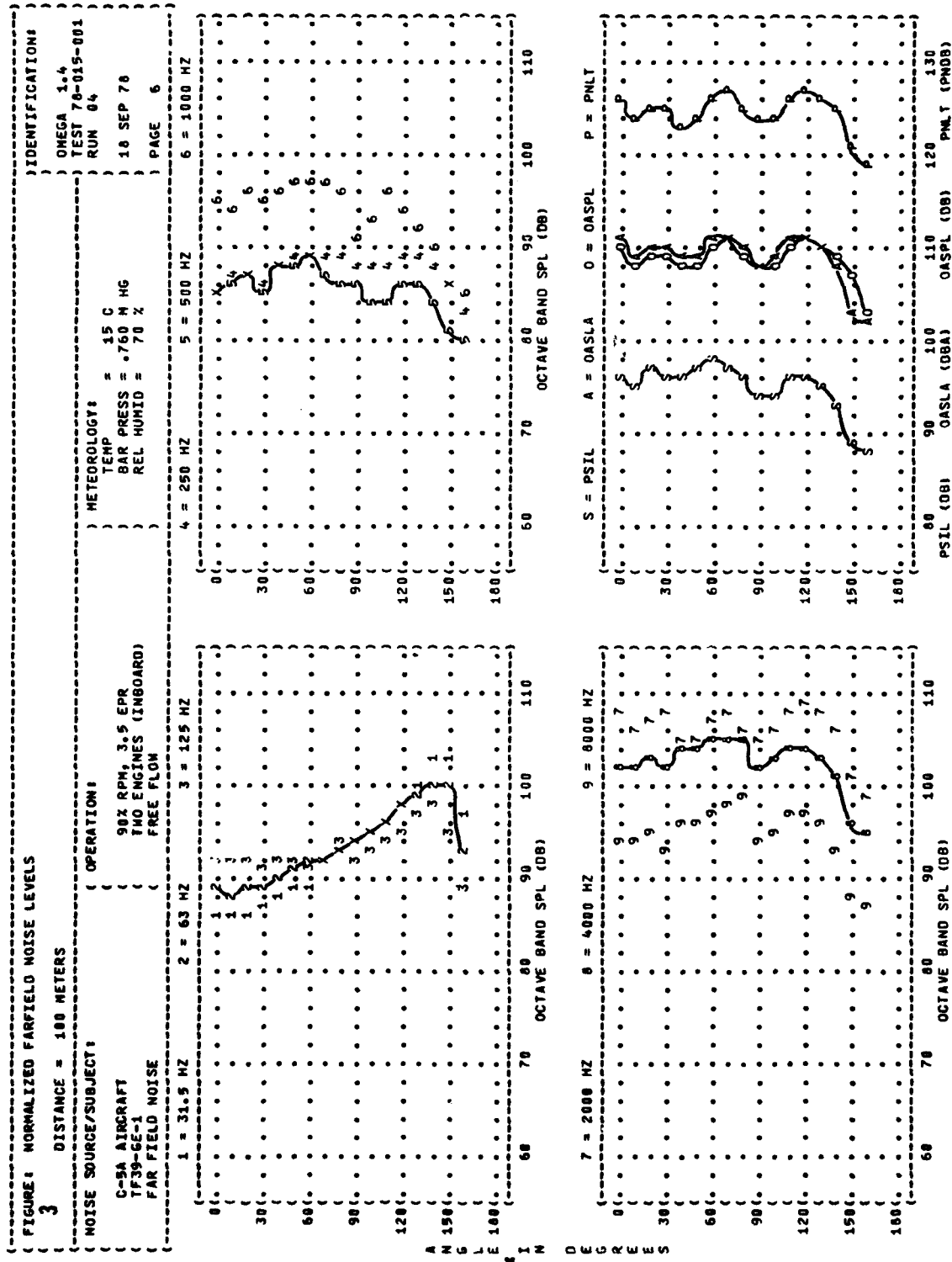


FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

C-5A AIRCRAFT
TF39-GE-1
FAR FIELD NOISE

OPERATION:
MAXIMUM POWER
96% RPM, 4.40 EPR
TWO ENGINES (INBOARD)
FREE FLOW

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1-4
TEST 78-815-001
RUN 05
18 SEP 78
PAGE 6

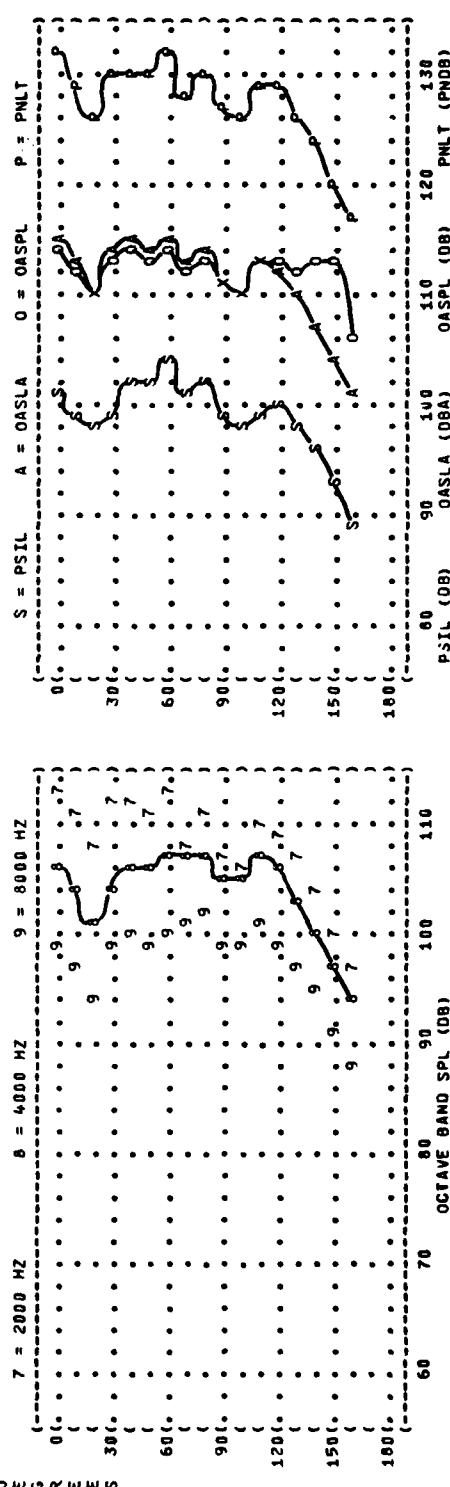
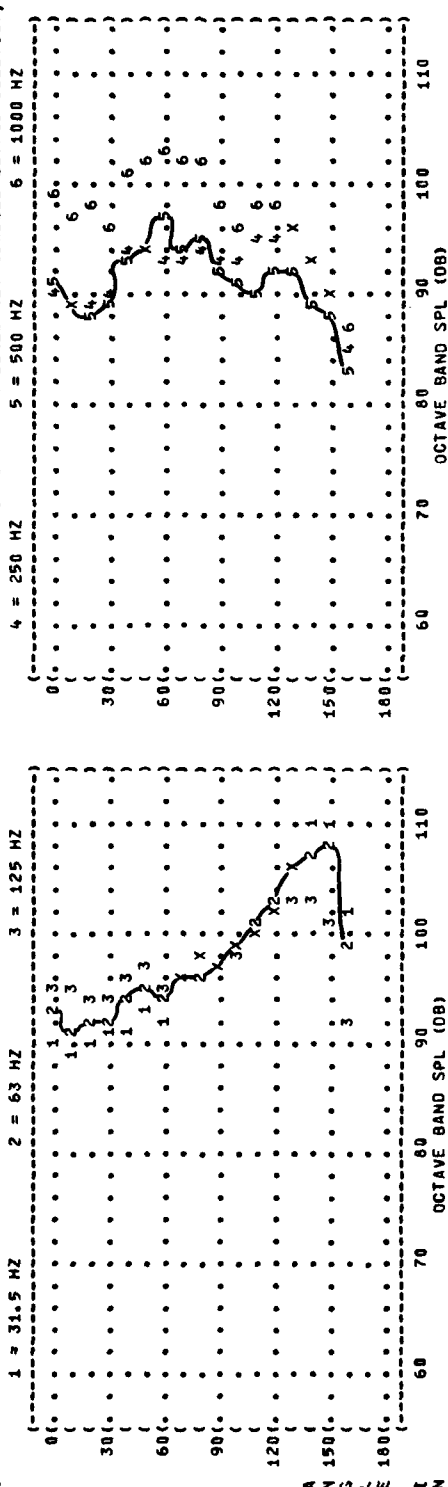


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4

TEST 78-015-001

RUN 02

NOISE SOURCE/SUBJECT:

OPERATION:

77% RPM, 1.6 EPR

TWO ENGINES (INBOARD)

FREE FLOW

TEMP = 28 C

BAR PRESS = .727 M HG

REL HUMID = 54 %

10 SEP 78

PAGE 3

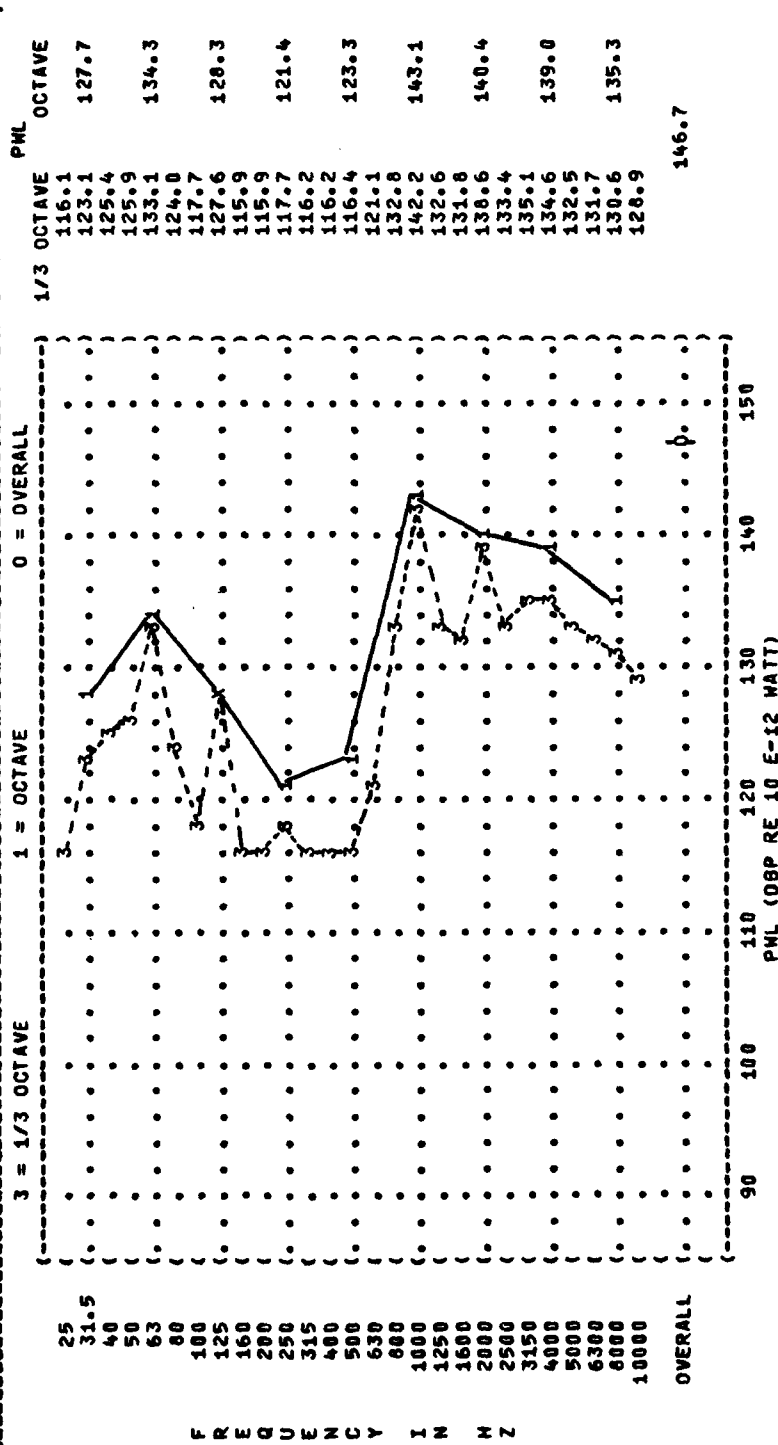


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4

TEST 78-015-001

RUN 04

18 SEP 78

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATION:

90% RPM, 3.5 EPR

TWO ENGINES (INBOARD)

FREE FLOW

TEMP = 28 C

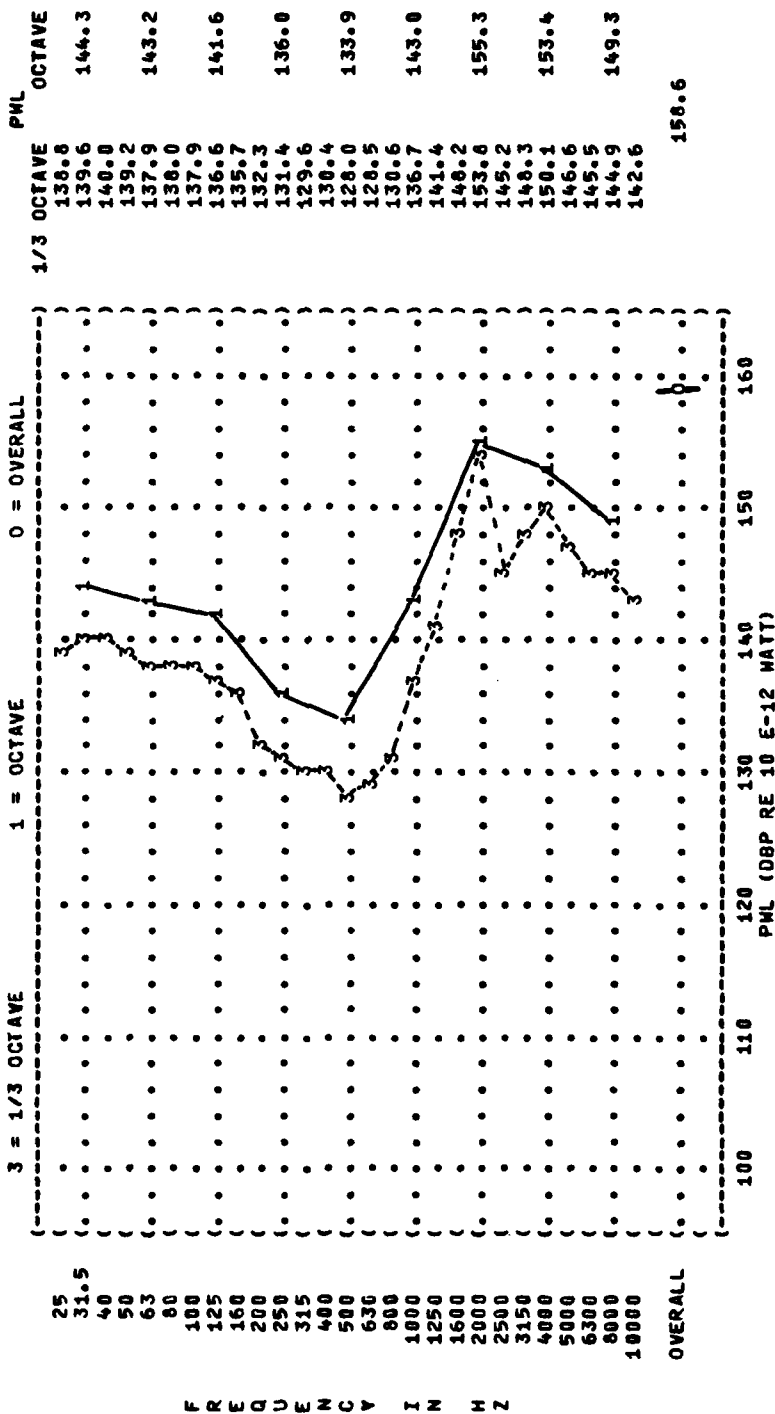
BAR PRESS = .727 H HG

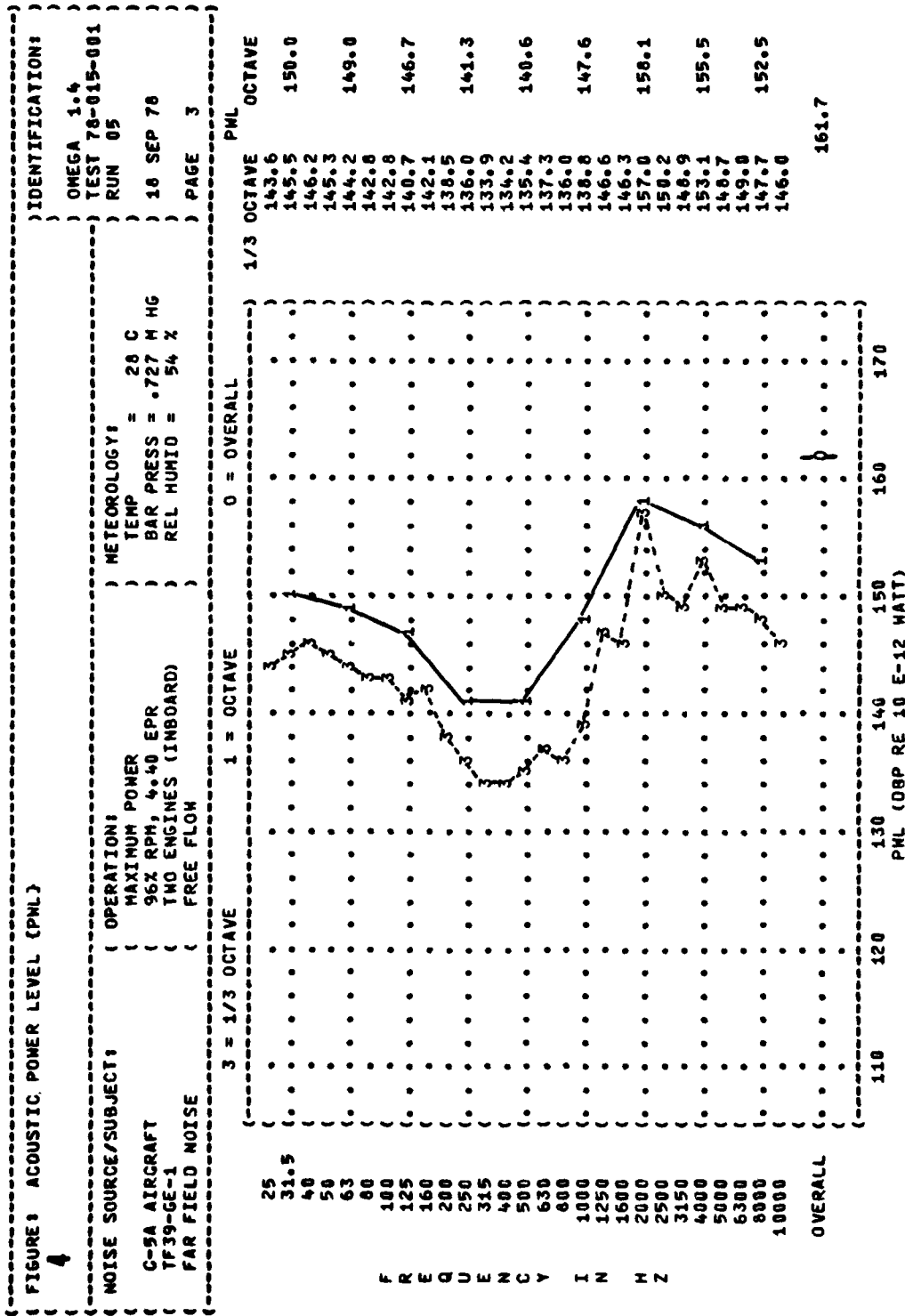
REL HUMID = 54 %

1 = OCTAVE

3 = 1/3 OCTAVE

0 = OVERALL





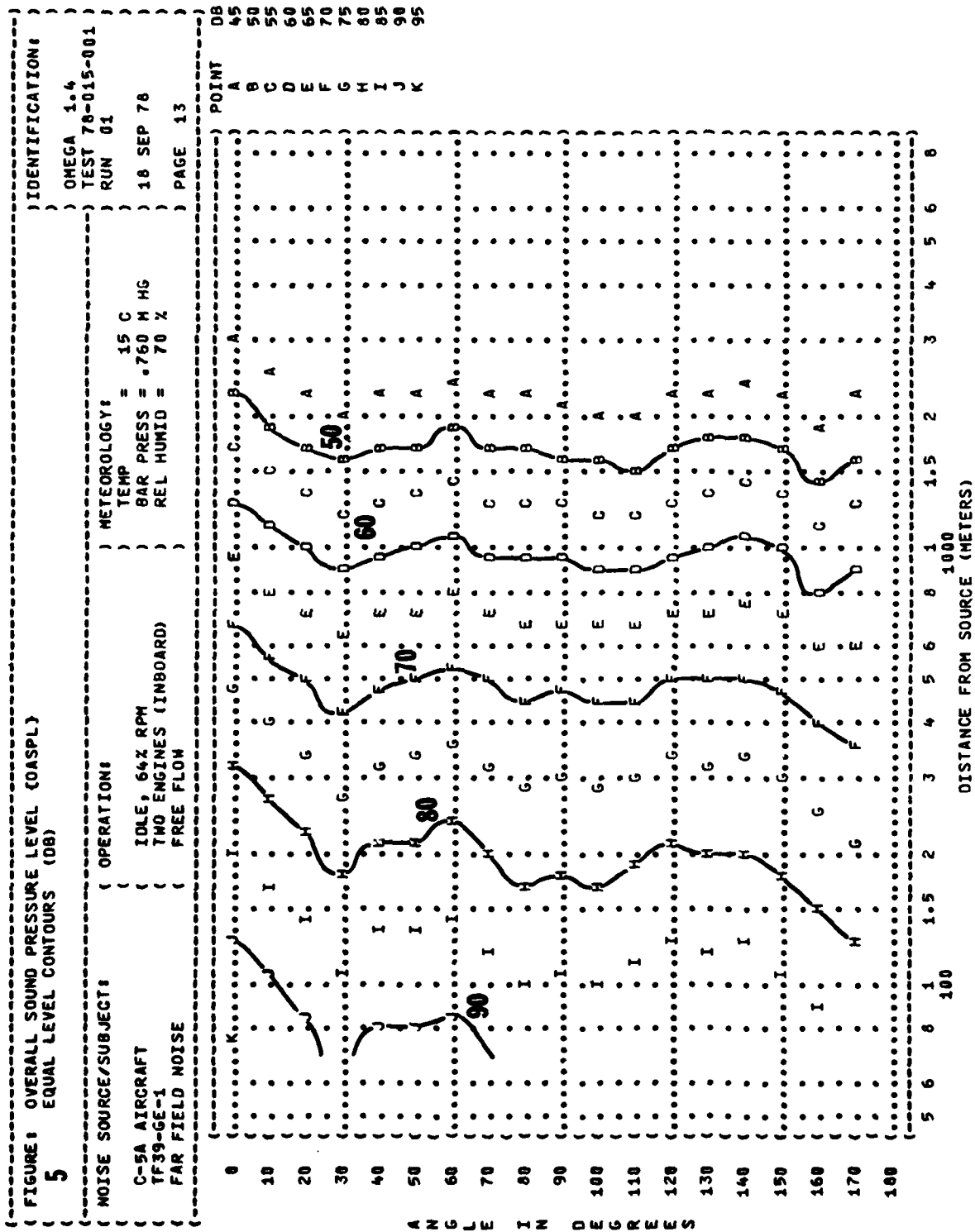
| TABLE: DIRECTIVITY INDEX (DB) | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|---|----|----|----|----|----|----|----|----|-------------------------|-----|-----|-----|-----|-----------------------|-----|-----|-----|-----|-----------------|--|--|--|--|
| 6 | | | | | | | | | | | | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | OPERATION: | | | | | METEOROLOGY: | | | | | IDENTIFICATION: | | | | |
| C-5A AIRCRAFT | | | | | | | | | | (IDLE, 64% RPM | | | | | TEMP = 28 C | | | | | OMEGA 1.4 | | | | |
| TF39-GE-1 | | | | | | | | | | (TWO ENGINES (INBOARD) | | | | | BAR PRESS = .727 M HG | | | | | TEST 78-015-001 | | | | |
| FAR FIELD NOISE | | | | | | | | | | (FREE FLOW | | | | | REL HUMID = 54 % | | | | | RUN 01 | | | | |
| | | | | | | | | | | | | | | | | | | | | 18 SEP 78 | | | | |
| | | | | | | | | | | | | | | | | | | | | PAGE 4 | | | | |
| FREQ | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | | | | | |
| (HZ) | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/3 OCTAVE | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | |
| 31.5 | | | | | | | | | | | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | | | | | | | | | | | |
| 160 | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | | | | | | | | | | | |
| 250 | | | | | | | | | | | | | | | | | | | | | | | | |
| 315 | | | | | | | | | | | | | | | | | | | | | | | | |
| 400 | | | | | | | | | | | | | | | | | | | | | | | | |
| 500 | | | | | | | | | | | | | | | | | | | | | | | | |
| 630 | | | | | | | | | | | | | | | | | | | | | | | | |
| 800 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1000 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1250 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1600 | | | | | | | | | | | | | | | | | | | | | | | | |
| 2000 | | | | | | | | | | | | | | | | | | | | | | | | |
| 2500 | | | | | | | | | | | | | | | | | | | | | | | | |
| 3150 | | | | | | | | | | | | | | | | | | | | | | | | |
| 4000 | | | | | | | | | | | | | | | | | | | | | | | | |
| 5000 | | | | | | | | | | | | | | | | | | | | | | | | |
| 6300 | | | | | | | | | | | | | | | | | | | | | | | | |
| 8000 | | | | | | | | | | | | | | | | | | | | | | | | |
| 10000 | | | | | | | | | | | | | | | | | | | | | | | | |
| OCTAVE | | | | | | | | | | | | | | | | | | | | | | | | |
| 31.5 | | | | | | | | | | | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | | | | | | | | | | | |
| 250 | | | | | | | | | | | | | | | | | | | | | | | | |
| 500 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1000 | | | | | | | | | | | | | | | | | | | | | | | | |
| 2000 | | | | | | | | | | | | | | | | | | | | | | | | |
| 4000 | | | | | | | | | | | | | | | | | | | | | | | | |
| 8000 | | | | | | | | | | | | | | | | | | | | | | | | |
| OVERALL | | | | | | | | | | | | | | | | | | | | | | | | |

| TABLE: DIRECTIVITY INDEX (DB) | | | | | | | | | | | | | | | | |
|--|-----------------|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
| 6 | | | | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY: = 28 C) OMEGA 1.4) | | | | | | | | | | | | | | | | |
| C-5A AIRCRAFT (77% RPM, 1.6 EPR) BAR PRESS = .727 M HG) TEST 78-015-001) | | | | | | | | | | | | | | | | |
| TF39-GE-1 (TWO ENGINES (INBOARD)) REL HUMID = 54 %) RUN 02) | | | | | | | | | | | | | | | | |
| FAR FIELD NOISE (FREE FLOW)) PAGE 4) | | | | | | | | | | | | | | | | |
| FREQ | ANGLE (DEGREES) | | | | | | | | | | | | | | | |
| (HZ) | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 |
| 1/3 OCTAVE | | | | | | | | | | | | | | | | |
| 25 | -5 | -5 | -4 | -4 | -5 | -3 | -2 | 0 | 1 | 4 | 3 | 5 | -1 | 4 | 6 | 5 |
| 31.5 | -4 | -8 | -6 | -5 | -2 | -2 | -2 | -1 | 2 | 3 | 3 | 0 | 0 | -2 | -2 | -2 |
| 40 | -4 | -5 | -4 | -2 | -2 | -2 | -2 | 0 | -1 | 3 | 3 | 2 | 0 | -1 | -2 | -1 |
| 50 | -3 | -4 | -1 | -8 | -3 | -7 | 1 | 1 | -2 | -5 | -5 | 2 | 4 | -1 | 5 | 2 |
| 63 | -2 | -1 | -1 | -3 | -1 | -3 | 2 | 1 | -2 | -3 | -2 | 1 | 2 | -1 | 4 | 1 |
| 80 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | -1 | -1 | 0 | 0 | 0 | 1 | 0 |
| 100 | -4 | -3 | -1 | -6 | -4 | 2 | -4 | -6 | 5 | 2 | -1 | -5 | 2 | 3 | -2 | -4 |
| 125 | 1 | 1 | 2 | -1 | 0 | 1 | 0 | -1 | 2 | 1 | 0 | -1 | 0 | 0 | 0 | -10 |
| 160 | 4 | 4 | 3 | 1 | 1 | 2 | 2 | 1 | 1 | 0 | -1 | -1 | -2 | -1 | -2 | -2 |
| 200 | 4 | 3 | 3 | 1 | 2 | 0 | 0 | 3 | -1 | 2 | -2 | -2 | -4 | -1 | -2 | -4 |
| 250 | 6 | 3 | 3 | -2 | 2 | 0 | 0 | 1 | 2 | 2 | 0 | -1 | -2 | -4 | -6 | -7 |
| 315 | 9 | 4 | 6 | -2 | 3 | 1 | 1 | 1 | 2 | 0 | -1 | -3 | -4 | -2 | -4 | -6 |
| 400 | 12 | 6 | 6 | -1 | 4 | 1 | 1 | 0 | 0 | -3 | -3 | -5 | -3 | 1 | -2 | -3 |
| 500 | 7 | 7 | 6 | 0 | 4 | 1 | 1 | 2 | -2 | -1 | -3 | -6 | -4 | 2 | -2 | -2 |
| 630 | 0 | -3 | 1 | -3 | -1 | 3 | 1 | 1 | -3 | -1 | -3 | 1 | -3 | 2 | -2 | -5 |
| 800 | -4 | -4 | 2 | -6 | -2 | 4 | 2 | -5 | 1 | 0 | -5 | -6 | -2 | -5 | -7 | -11 |
| 1000 | 3 | 0 | 4 | -1 | 1 | 2 | 6 | -1 | -4 | -5 | -6 | -1 | -6 | -5 | 0 | -4 |
| 1250 | 9 | 1 | 6 | 7 | 2 | 2 | 2 | 0 | -4 | -3 | -4 | -1 | -1 | -2 | -5 | -8 |
| 1600 | 2 | 1 | 6 | 1 | 1 | 1 | 2 | 0 | -2 | -1 | -2 | -1 | -1 | -1 | -3 | -6 |
| 2000 | 4 | 3 | 4 | 1 | 3 | 3 | 3 | 0 | -3 | -4 | -2 | -1 | -1 | -1 | -4 | -7 |
| 2500 | 4 | 4 | 5 | 0 | 1 | 2 | 3 | 0 | -2 | -3 | -2 | 1 | 0 | 0 | -2 | -5 |
| 3150 | 3 | 2 | 4 | 1 | 1 | 2 | 3 | -1 | -3 | -4 | -3 | 0 | 0 | 0 | -2 | -6 |
| 4000 | 4 | 6 | 4 | 1 | 2 | 3 | 3 | 0 | -2 | -4 | -3 | -1 | 0 | -2 | -3 | -7 |
| 5000 | 4 | 3 | 4 | 0 | 2 | 2 | 2 | 0 | -2 | -3 | -3 | -1 | 0 | -1 | -4 | -7 |
| 6300 | 4 | 3 | 4 | 1 | 2 | 2 | 3 | 1 | -2 | -2 | -4 | 0 | 0 | -1 | -4 | -7 |
| 8000 | 4 | 3 | 4 | 1 | 2 | 2 | 3 | 0 | -2 | -2 | -4 | 0 | 0 | -1 | -4 | -7 |
| 10000 | 4 | 3 | 4 | 1 | 2 | 2 | 2 | 0 | -1 | -1 | -3 | -1 | 0 | -1 | -3 | -6 |
| OCTAVE | | | | | | | | | | | | | | | | |
| 31.5 | -5 | -7 | -6 | -5 | -3 | -2 | -2 | -1 | 1 | 4 | 3 | 1 | -1 | -1 | -1 | 0 |
| 63 | -3 | -4 | -2 | -6 | -2 | -5 | 1 | -5 | -2 | -2 | -2 | 1 | 3 | -1 | 4 | 2 |
| 125 | -3 | -2 | -1 | -5 | -3 | 2 | -3 | -5 | 4 | 2 | -1 | -4 | 2 | -2 | -2 | -4 |
| 250 | 4 | 3 | 3 | 0 | 3 | 2 | 1 | 2 | 0 | 1 | -1 | -2 | -3 | -3 | -4 | -6 |
| 500 | 9 | 6 | 6 | -1 | 4 | 1 | 2 | 1 | 0 | -2 | -3 | -5 | -4 | 0 | -2 | -3 |
| 1000 | -2 | -3 | 2 | -5 | -2 | 4 | 2 | -4 | 1 | -1 | -4 | -1 | 1 | 2 | 0 | -4 |
| 2000 | 4 | 4 | 6 | 2 | 3 | 1 | 3 | 0 | -2 | -1 | -3 | -1 | -1 | -1 | -6 | -9 |
| 4000 | 4 | 4 | 4 | 1 | 1 | 2 | 2 | 0 | -2 | -3 | -3 | 0 | 0 | -2 | -5 | -9 |
| 8000 | 4 | 3 | 4 | 1 | 2 | 2 | 3 | 0 | -2 | -2 | -4 | 0 | 0 | -2 | -4 | -7 |
| OVERALL | 1 | 0 | 4 | -1 | 0 | 3 | 2 | -2 | 0 | -1 | -3 | -1 | 1 | 1 | -1 | -4 |
| | | | | | | | | | | | | | | | | -6 |

| TABLE: DIRECTIVITY INDEX (DB) | | | | | | | | | | | | | | | | | | IDENTIFICATION: | |
|-------------------------------|-----|-----|-----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----------------------|-----|
| 6 | | | | | | | | | | | | | | | | | | OMEGA 1.4 | |
| | | | | | | | | | | | | | | | | | | TEST 78-015-001 | |
| | | | | | | | | | | | | | | | | | | RUN 03 | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | | | | | | | | |
| (OPERATION: | | | | | | | | | | | | | | | | | | | |
| (65% RPM, 2.5 EPR | | | | | | | | | | | | | | | | | | TEMP = 28 C | |
| (TWO ENGINES (INBOARD) | | | | | | | | | | | | | | | | | | BAR PRESS = .727 M HG | |
| (FREE FLOW | | | | | | | | | | | | | | | | | | REL HUMID = 54 % | |
| C-5A AIRCRAFT | | | | | | | | | | | | | | | | | | 24 JAN 79 | |
| TF39-GE-1 | | | | | | | | | | | | | | | | | | PAGE 4 | |
| FAR FIELD NOISE | | | | | | | | | | | | | | | | | | | |
| FREQ (HZ) | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 1/3 OCTAVE | | | | | | | | | | | | | | | | | | | |
| 25 | -8 | -8 | -9 | -7 | -6 | -7 | -6 | -4 | -1 | -2 | 1 | 0 | 3 | 2 | 2 | 5 | 3 | | |
| 31.5 | -9 | -10 | -8 | -8 | -7 | -5 | -3 | -3 | 0 | 0 | 0 | 1 | 1 | 2 | 2 | 4 | 4 | 1 | |
| 40 | -11 | -9 | -10 | -7 | -7 | -5 | -4 | -5 | -1 | 0 | 1 | 3 | 0 | 2 | 2 | 3 | 3 | 0 | |
| 50 | -6 | -6 | -7 | -5 | -1 | -2 | -4 | -2 | 2 | 0 | 1 | 0 | 0 | 2 | 2 | 2 | 0 | -3 | |
| 63 | -4 | -6 | -4 | -3 | -3 | 1 | 1 | -1 | -2 | 0 | 0 | 2 | 2 | 2 | 2 | 1 | 0 | -3 | |
| 80 | -4 | -4 | -4 | -3 | -3 | 1 | 1 | -1 | -2 | -1 | 0 | 2 | 2 | 2 | 2 | 5 | 1 | -4 | |
| 100 | -4 | -2 | -4 | -1 | -2 | 0 | 0 | -1 | -2 | -3 | -3 | 1 | 0 | 2 | 3 | 4 | 1 | -3 | |
| 125 | -2 | -1 | -2 | -1 | -1 | 1 | 1 | 0 | 1 | -4 | -3 | -2 | 0 | 2 | 2 | 4 | 1 | -3 | |
| 160 | -2 | 0 | -1 | -2 | -1 | -2 | 0 | -1 | 1 | 0 | -1 | 0 | 0 | 2 | 2 | 0 | -1 | -4 | |
| 200 | -1 | 1 | -1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | -1 | -5 | |
| 250 | -2 | 0 | -2 | 1 | 2 | 1 | 2 | 0 | 1 | 0 | -1 | -1 | -3 | -2 | -1 | -1 | -4 | -7 | |
| 315 | -2 | 0 | -3 | 1 | 3 | 3 | 3 | 2 | 2 | -1 | -2 | -2 | -2 | -4 | -3 | -6 | -7 | -7 | |
| 400 | 0 | 0 | -1 | 1 | 3 | 4 | 2 | 1 | 0 | -2 | -3 | -3 | -3 | -3 | -4 | -7 | -9 | | |
| 500 | 2 | 1 | 0 | 3 | 4 | 0 | 0 | 3 | 0 | -3 | -1 | 0 | 0 | -2 | -4 | -8 | -10 | | |
| 630 | 2 | 2 | 1 | 4 | 4 | 0 | 1 | 4 | -1 | -3 | 0 | 0 | 2 | -5 | -5 | -9 | -11 | | |
| 800 | 0 | 1 | 1 | 3 | 4 | -1 | 1 | 4 | -1 | -1 | -1 | 2 | 3 | 1 | 1 | -4 | -6 | | |
| 1000 | -1 | -1 | -1 | 1 | 4 | 3 | 0 | -1 | 0 | -2 | -5 | -1 | 2 | 2 | 0 | -6 | -8 | | |
| 1250 | 0 | 0 | 0 | 2 | 3 | -2 | 0 | 0 | 0 | -2 | 0 | 0 | 0 | -2 | -3 | -8 | -10 | | |
| 1600 | 0 | 0 | -1 | 1 | 4 | -2 | 1 | 0 | 2 | 0 | -1 | 1 | 1 | -1 | -3 | -6 | -8 | | |
| 2000 | -2 | -1 | -2 | 0 | 0 | 1 | 1 | 1 | 1 | -2 | -3 | 2 | 2 | 2 | 0 | -4 | -6 | | |
| 2500 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | -1 | 1 | 1 | 0 | -2 | -7 | -9 | | |
| 3150 | -3 | -2 | -3 | -1 | 1 | 0 | 1 | 1 | -1 | -2 | -3 | 2 | 2 | 1 | 0 | -6 | -7 | | |
| 4000 | -3 | 0 | -2 | -1 | 1 | 1 | 1 | 2 | 0 | 0 | -1 | 2 | 1 | 0 | -1 | -6 | -8 | | |
| 5000 | -2 | -1 | -3 | -1 | 0 | 1 | 1 | 1 | 0 | 0 | -2 | 1 | 1 | 0 | -1 | -6 | -7 | | |
| 6300 | -1 | -1 | -3 | -1 | 0 | 1 | 1 | 1 | 1 | 1 | -2 | 1 | 1 | 0 | -2 | -6 | -8 | | |
| 8000 | -1 | -1 | -4 | -2 | -1 | 0 | 1 | 1 | 1 | 1 | -2 | 2 | 1 | 0 | -1 | -6 | -8 | | |
| 10000 | -1 | -2 | -4 | -3 | -1 | 0 | 1 | 2 | 2 | 1 | -2 | 2 | 1 | 0 | -2 | -6 | -8 | | |
| OCTAVE | | | | | | | | | | | | | | | | | | | |
| 31.5 | -10 | -9 | -9 | -8 | -7 | -5 | -4 | -4 | -1 | 0 | 1 | 2 | 2 | 2 | 2 | 4 | 4 | 1 | |
| 63 | -5 | -5 | -5 | -4 | -2 | 0 | 0 | -2 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | -3 | |
| 125 | -3 | -1 | -2 | -1 | -1 | 0 | 0 | -1 | 0 | -2 | -3 | 0 | 0 | 0 | 2 | 4 | 1 | -4 | |
| 250 | -2 | 0 | -2 | 1 | 2 | 2 | 2 | 0 | 0 | 0 | -1 | -1 | -1 | -3 | -3 | -3 | -6 | | |
| 500 | 1 | 1 | 0 | 3 | 4 | 3 | 2 | 1 | 1 | -2 | -3 | -2 | -2 | 0 | -1 | -1 | -7 | | |
| 1000 | 0 | 0 | 0 | 2 | 3 | -2 | 9 | 1 | -1 | -1 | -3 | 2 | 2 | 0 | 0 | 0 | -5 | | |
| 2000 | 0 | 0 | -1 | 1 | 3 | -1 | 1 | 1 | 0 | -1 | -4 | 0 | 0 | 0 | 0 | 0 | -7 | | |
| 4000 | -3 | -1 | -3 | -1 | 1 | 0 | 1 | 1 | 0 | -1 | -2 | 2 | 1 | 1 | 1 | 0 | -5 | | |
| 8000 | -1 | -1 | -3 | -2 | -1 | 1 | 1 | 1 | 1 | 1 | -2 | 1 | 1 | 0 | -2 | -6 | -8 | | |
| OVERALL | | | | | | | | | | | | | | | | | | | |
| -1 | 0 | -2 | 0 | 2 | -1 | 1 | 1 | 1 | 0 | -1 | -2 | 1 | 2 | 1 | 1 | 0 | -4 | -6 | |

| TABLE: DIRECTIVITY INDEX (DB) | | | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|
| 6 | | | | | | | | | | | | | | | | | |
| NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY: = 28 C | | | | | | | | | | | | | | | | | |
| C-5A AIRCRAFT (90% RPM, 3.5 EPR) BAR PRESS = .727 M HG | | | | | | | | | | | | | | | | | |
| TF39-GE-1 (TWO ENGINES (INBOARD)) REL HUMID = 54 % | | | | | | | | | | | | | | | | | |
| FAR FIELD NOISE (FREE FLOW) | | | | | | | | | | | | | | | | | |
| FREQ (HZ) 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 | | | | | | | | | | | | | | | | | |
| ANGLE (DEGREES) | | | | | | | | | | | | | | | | | |
| 1/3 OCTAVE | | | | | | | | | | | | | | | | | |
| 25 | -12 | -11 | -13 | -8 | -9 | -9 | -5 | -4 | -4 | -2 | -2 | -1 | 0 | 4 | 6 | 7 | 1 |
| 31.5 | -11 | -11 | -11 | -9 | -9 | -8 | -4 | -3 | -2 | -2 | -2 | 0 | 1 | 3 | 6 | 6 | 1 |
| 40 | -11 | -10 | -10 | -10 | -8 | -7 | -6 | -4 | -3 | -1 | -1 | 0 | 3 | 2 | 6 | 6 | 0 |
| 50 | -9 | -9 | -9 | -7 | -5 | -7 | -6 | -4 | -2 | -1 | -1 | 0 | 1 | 4 | 4 | 6 | -1 |
| 63 | -6 | -8 | -6 | -5 | -6 | -5 | -4 | -4 | -2 | -2 | -1 | 1 | 2 | 3 | 5 | 4 | -2 |
| 80 | -4 | -6 | -5 | -5 | -5 | -2 | -3 | -3 | -3 | -3 | 0 | 1 | 3 | 3 | 5 | 2 | -4 |
| 100 | -2 | -2 | -4 | -2 | -2 | -1 | -2 | -3 | -2 | -2 | -2 | 0 | 1 | 2 | 4 | 1 | -6 |
| 125 | -3 | -3 | -3 | -4 | -4 | -1 | -2 | -2 | -2 | -2 | 0 | 1 | 2 | 2 | 5 | 1 | -6 |
| 160 | -2 | -1 | 0 | -4 | -3 | -2 | -1 | 0 | 0 | -1 | 0 | 1 | 2 | 2 | 2 | 1 | -2 |
| 200 | -5 | -3 | -2 | -2 | 0 | 0 | 0 | 0 | -1 | 0 | 0 | 1 | 1 | 3 | 1 | -1 | -4 |
| 250 | -3 | -2 | -1 | -2 | 1 | 2 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | -1 | -4 | -7 |
| 315 | -2 | 0 | 0 | -3 | 2 | 2 | 1 | 3 | 1 | 0 | -1 | -1 | 0 | -1 | -3 | -6 | -6 |
| 400 | -3 | -2 | 0 | -3 | 2 | 2 | 2 | 1 | -2 | -1 | -2 | -2 | 1 | 2 | -1 | -4 | -5 |
| 500 | 0 | 1 | 1 | -1 | 1 | 2 | 0 | 1 | -2 | -1 | -2 | -1 | 1 | -2 | -4 | -5 | -6 |
| 630 | 1 | 0 | 2 | 0 | 1 | 3 | 2 | 0 | 0 | -4 | -2 | -1 | 0 | -2 | -3 | -5 | -6 |
| 800 | 1 | 0 | 3 | 2 | 2 | 3 | 3 | 0 | 1 | -3 | -2 | -1 | 1 | 0 | -2 | -5 | -6 |
| 1000 | 0 | -1 | 1 | 1 | 1 | 2 | 2 | 1 | -2 | -1 | -2 | -1 | 1 | -2 | -5 | -7 | -7 |
| 1250 | 1 | -1 | 1 | 1 | 1 | 2 | 3 | 2 | 1 | -3 | -1 | 1 | -2 | -4 | -5 | -9 | -10 |
| 1600 | 1 | 0 | 1 | 1 | 0 | -3 | -2 | 1 | 0 | -1 | -1 | 3 | 2 | 0 | -3 | -9 | -10 |
| 2000 | 2 | -1 | 1 | 1 | 2 | -2 | 1 | 2 | 1 | -2 | -2 | 1 | 2 | 2 | -3 | -9 | -10 |
| 2500 | -1 | 1 | 0 | 2 | 2 | 1 | 3 | 2 | 2 | -2 | -2 | -1 | 0 | -2 | -4 | -9 | -10 |
| 3150 | -1 | -2 | 1 | -1 | 1 | 2 | 2 | 2 | 2 | -1 | -2 | 0 | 0 | -2 | -5 | -10 | -11 |
| 4000 | -1 | -1 | -2 | -3 | -1 | 0 | 1 | 2 | 2 | -1 | 0 | 1 | 1 | -1 | -6 | -7 | -7 |
| 5000 | -1 | -1 | 0 | -1 | 0 | 1 | 2 | 2 | 3 | -1 | -1 | 0 | 0 | -1 | -4 | -9 | -10 |
| 6300 | -1 | -1 | 0 | -2 | 0 | 0 | 2 | 2 | 2 | -2 | 0 | 1 | 1 | 0 | -2 | -7 | -9 |
| 8000 | -2 | -1 | 0 | -2 | -1 | 0 | 2 | 2 | 3 | -1 | -1 | 1 | 1 | -1 | -3 | -8 | -10 |
| 10000 | -2 | -2 | -1 | -2 | -1 | 0 | 2 | 3 | 3 | -1 | -1 | 1 | 1 | 0 | -3 | -8 | -10 |
| OCTAVE | | | | | | | | | | | | | | | | | |
| 31.5 | -11 | -10 | -11 | -9 | -8 | -7 | -4 | -3 | -3 | -2 | -2 | 0 | 2 | 3 | 6 | 6 | 1 |
| 63 | -6 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -2 | -1 | -1 | 1 | 2 | 4 | 5 | 5 | -2 |
| 125 | -2 | -2 | -2 | -3 | -2 | -1 | -2 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 1 | -4 |
| 250 | -3 | -1 | -1 | -2 | 0 | 1 | 1 | 1 | 0 | -2 | -2 | -2 | 1 | 1 | 0 | -3 | -6 |
| 500 | -1 | 0 | 1 | -1 | 2 | 2 | 3 | 1 | 0 | -2 | -2 | 1 | -1 | -3 | -5 | -6 | -6 |
| 1000 | 1 | -1 | 2 | 1 | 1 | 2 | 2 | 2 | -1 | -3 | -1 | 1 | -1 | -3 | -5 | -9 | -10 |
| 2000 | 2 | 0 | 1 | 1 | -2 | -2 | 1 | 2 | -1 | -1 | -1 | 2 | 2 | 1 | -1 | -6 | -7 |
| 4000 | -1 | -1 | 0 | -2 | 0 | 1 | 2 | 2 | 2 | -1 | -1 | 1 | 1 | -1 | -3 | -7 | -9 |
| 8000 | -1 | -2 | -1 | -2 | 0 | 0 | 2 | 3 | 3 | -2 | -1 | 1 | 1 | 0 | -3 | -7 | -9 |
| OVERALL | | | | | | | | | | | | | | | | | |
| 0 | -1 | 0 | 0 | -1 | -1 | -1 | 1 | 1 | 0 | -1 | -1 | 1 | 2 | 1 | 0 | -2 | -6 |

| TABLE: DIRECTIVITY INDEX (DB) | | | | | | | | | | | | | | | | | | | IDENTIFICATION: | |
|-------------------------------|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------------|--|
| 6 | | | | | | | | | | | | | | | | | | | OMEGA 1.4 | |
| NOISE SOURCE/SUBJECT: | | | | | | | | | | | | | | | | | | | TEST 78-815-001 | |
| (OPERATION:) | | | | | | | | | | | | | | | | | | | RUN 05 | |
| (MAXIMUM POWER) | | | | | | | | | | | | | | | | | | | | |
| (96% RPM, 4.40 EPR) | | | | | | | | | | | | | | | | | | | TEMP = 28 C | |
| (TWO ENGINES (INBOARD)) | | | | | | | | | | | | | | | | | | | BAR PRESS = .727 M HG | |
| (FREE FLOW) | | | | | | | | | | | | | | | | | | | REL HUMID = 54 % | |
| FAR FIELD NOISE | | | | | | | | | | | | | | | | | | | PAGE 4 | |
| FREQ | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | |
| (HZ) | | | | | | | | | | | | | | | | | | | | |
| 1/3 OCTAVE | | | | | | | | | | | | | | | | | | | | |
| 25 | -11 | -12 | -12 | -11 | -9 | -10 | -11 | -6 | -5 | -5 | -4 | -3 | -1 | 4 | 7 | 7 | 2 | | | |
| 31.5 | -12 | -13 | -13 | -11 | -13 | -10 | -10 | -6 | -4 | -4 | -3 | -2 | -1 | 4 | 4 | 8 | 7 | 0 | | |
| 40 | -13 | -13 | -13 | -12 | -12 | -8 | -9 | -6 | -5 | -6 | -4 | -3 | 0 | 3 | 7 | 8 | -2 | | | |
| 50 | -11 | -12 | -12 | -9 | -9 | -8 | -8 | -5 | -4 | -4 | -3 | -1 | 1 | 5 | 6 | 7 | -1 | | | |
| 63 | -9 | -11 | -10 | -7 | -6 | -5 | -7 | -7 | -6 | -5 | -2 | 0 | 3 | 4 | 6 | 7 | -3 | | | |
| 80 | -6 | -7 | -6 | -7 | -6 | -5 | -5 | -5 | -5 | -4 | -1 | 1 | 3 | 4 | 5 | 6 | -3 | | | |
| 100 | -3 | -2 | -4 | -5 | -3 | -3 | -4 | -3 | -1 | -2 | -1 | 1 | 3 | 4 | 4 | 4 | -6 | | | |
| 125 | -2 | -4 | -4 | -4 | -2 | -2 | -4 | -3 | -1 | -2 | -2 | 0 | 3 | 4 | 5 | 2 | -6 | | | |
| 160 | -6 | -8 | -7 | -4 | -2 | 0 | -5 | -4 | 2 | -1 | 0 | 1 | 3 | 4 | 3 | -1 | -9 | | | |
| 200 | -5 | -5 | -5 | -4 | -1 | 0 | -1 | 0 | 0 | -1 | 0 | 2 | 3 | 4 | 0 | -3 | -8 | | | |
| 250 | -2 | -3 | -3 | -3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | -3 | -9 | | | |
| 315 | -1 | -3 | -3 | -2 | 2 | 2 | 0 | -1 | 0 | 0 | 0 | 0 | 0 | 1 | -1 | -4 | -7 | | | |
| 400 | -2 | -3 | -3 | -3 | 3 | 3 | 3 | 2 | 3 | -1 | -2 | -2 | 0 | -1 | -2 | -4 | -7 | | | |
| 500 | -1 | -3 | -4 | -3 | -1 | 1 | 1 | 2 | 3 | -1 | 0 | -2 | 1 | 0 | -2 | -4 | -9 | | | |
| 630 | -3 | -6 | -6 | -4 | -1 | 1 | 6 | 2 | 3 | -2 | -4 | -2 | -2 | -2 | -5 | -7 | -12 | | | |
| 800 | 3 | -1 | -2 | -1 | 1 | 1 | 4 | 2 | 2 | -1 | -4 | -2 | 0 | -1 | -3 | -6 | -11 | | | |
| 1000 | 1 | 0 | -2 | 0 | 1 | 2 | 3 | 2 | 0 | 0 | -2 | -1 | -1 | -4 | -5 | -8 | -13 | | | |
| 1250 | -1 | -3 | -1 | -4 | 1 | 3 | 3 | 2 | 3 | 0 | -3 | -1 | -1 | -4 | -7 | -10 | -13 | | | |
| 1600 | 2 | 3 | 1 | 3 | 5 | 1 | 1 | 0 | 0 | -2 | -4 | 0 | 0 | -3 | -6 | -10 | -13 | | | |
| 2000 | 4 | 1 | -1 | 3 | 3 | 2 | 4 | -2 | 2 | 2 | -3 | 0 | 1 | 0 | -2 | -5 | -9 | | | |
| 2500 | -1 | -2 | -3 | 2 | 2 | 1 | 2 | 2 | 1 | -1 | 0 | 1 | -1 | -3 | -5 | -9 | -12 | | | |
| 3150 | -1 | -2 | -3 | -1 | 1 | 1 | 2 | 2 | 1 | 0 | 0 | 2 | 1 | -2 | -5 | -9 | -12 | | | |
| 4000 | 2 | -1 | -4 | -1 | -1 | 0 | 2 | 2 | 2 | -1 | 0 | 2 | 1 | -2 | -4 | -7 | -10 | | | |
| 5000 | -1 | -2 | -4 | -1 | 1 | 0 | 2 | 2 | 3 | -1 | -1 | 2 | 0 | -1 | -5 | -8 | -11 | | | |
| 6300 | 0 | -1 | -5 | -1 | 1 | 0 | 1 | 1 | 3 | 0 | 0 | 1 | 0 | -1 | -4 | -7 | -11 | | | |
| 8000 | -1 | -3 | -5 | -1 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 2 | 0 | -1 | -4 | -7 | -11 | | | |
| 10000 | -1 | -3 | -5 | -1 | 0 | 0 | 1 | 2 | 3 | 2 | 0 | 1 | 0 | -2 | -4 | -7 | -11 | | | |
| OCTAVE | | | | | | | | | | | | | | | | | | | | |
| 31.5 | -12 | -13 | -13 | -11 | -11 | -9 | -10 | -6 | -4 | -5 | -4 | -2 | 0 | 4 | 7 | 8 | 0 | | | |
| 63 | -9 | -10 | -9 | -9 | -8 | -7 | -7 | -5 | -5 | -4 | -2 | 0 | 2 | 4 | 6 | 7 | -2 | | | |
| 125 | -3 | -4 | -5 | -4 | -2 | -1 | -4 | -3 | -1 | -2 | -1 | 1 | 3 | 4 | 4 | 2 | -7 | | | |
| 250 | -3 | -4 | -4 | -3 | 1 | 0 | -1 | 0 | 0 | 0 | 0 | 1 | 2 | 3 | 0 | -3 | -8 | | | |
| 500 | -2 | -4 | -4 | -3 | 0 | 1 | 4 | 2 | 3 | -1 | -2 | -1 | -1 | -1 | -3 | -5 | -9 | | | |
| 1000 | 0 | -2 | -1 | -3 | 3 | 2 | 3 | -1 | 2 | -1 | -3 | 0 | 0 | -4 | -6 | -9 | -13 | | | |
| 2000 | 3 | 1 | -1 | 3 | 3 | 2 | 3 | -1 | 1 | -2 | -3 | 0 | 0 | -3 | -5 | -9 | -12 | | | |
| 4000 | 1 | -1 | -4 | -1 | 0 | 0 | 2 | 2 | 3 | 0 | 0 | 2 | 1 | -2 | -5 | -8 | -11 | | | |
| 8000 | -1 | -2 | -5 | -1 | 1 | 0 | 1 | 2 | 3 | 0 | 0 | 2 | 0 | -2 | -5 | -8 | -11 | | | |
| OVERALL | 1 | -1 | -3 | 1 | 1 | 0 | 2 | 0 | 1 | -2 | -2 | 0 | 0 | 0 | 1 | 0 | -7 | | | |



```

(-----)
( ( FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL)
( (
( ( 5
( ( EQUAL LEVEL CONTOURS (DB)
( (
( (
( ( NOISE SOURCE/SUBJECT: ( OPERATION:
( (
( ( C-5A AIRCRAFT ( 77% RPM, 1.6 EPR
( ( TF39-GE-1 ( TWO ENGINES (INBOARD)
( ( FAR FIELD NOISE ( FREE FLOW
( (
( ( METEOROLOGY:
( ( TEMP = 15 C
( ( BAR PRESS = .760 M HG
( ( REL HUMID = 70 %
( (
( ( IDENTIFICATION:
( (
( ( OMEGA 1.4
( (
( ( TEST 78-015-001
( ( RUN 02
( (
( ( PAGE 13
(-----)

```

OVERALL SOUND PRESSURE LEVEL (OASPL)
EQUAL LEVEL CONTOURS (DB)



```

1  FIGURE:  OVERALL SOUND PRESSURE LEVEL {OASPL}
2  5  EQUAL LEVEL CONTOURS (DB)
3
4  NOISE SOURCE/SUBJECT:  ( OPERATION:
5  (
6  C-5A AIRCRAFT  ( 90% RPM, 3.5 EPR
7  TF39-GE-1  ( TWO ENGINES (INBOARD)
8  FAR FIELD NOISE  ( FREE FLOW
9
10 METEOROLOGY:  = 15 C
11 TEMP
12 BAR PRESS = .760 M HG
13 REL HUMID = 70 %
14
15 IDENTIFICATION:
16 ) OMEGA 1.4
17 )
18 ) TEST 78-015-001
19 ) RUN 04
20 )
21 )
22 ) PAGE 13
23 )

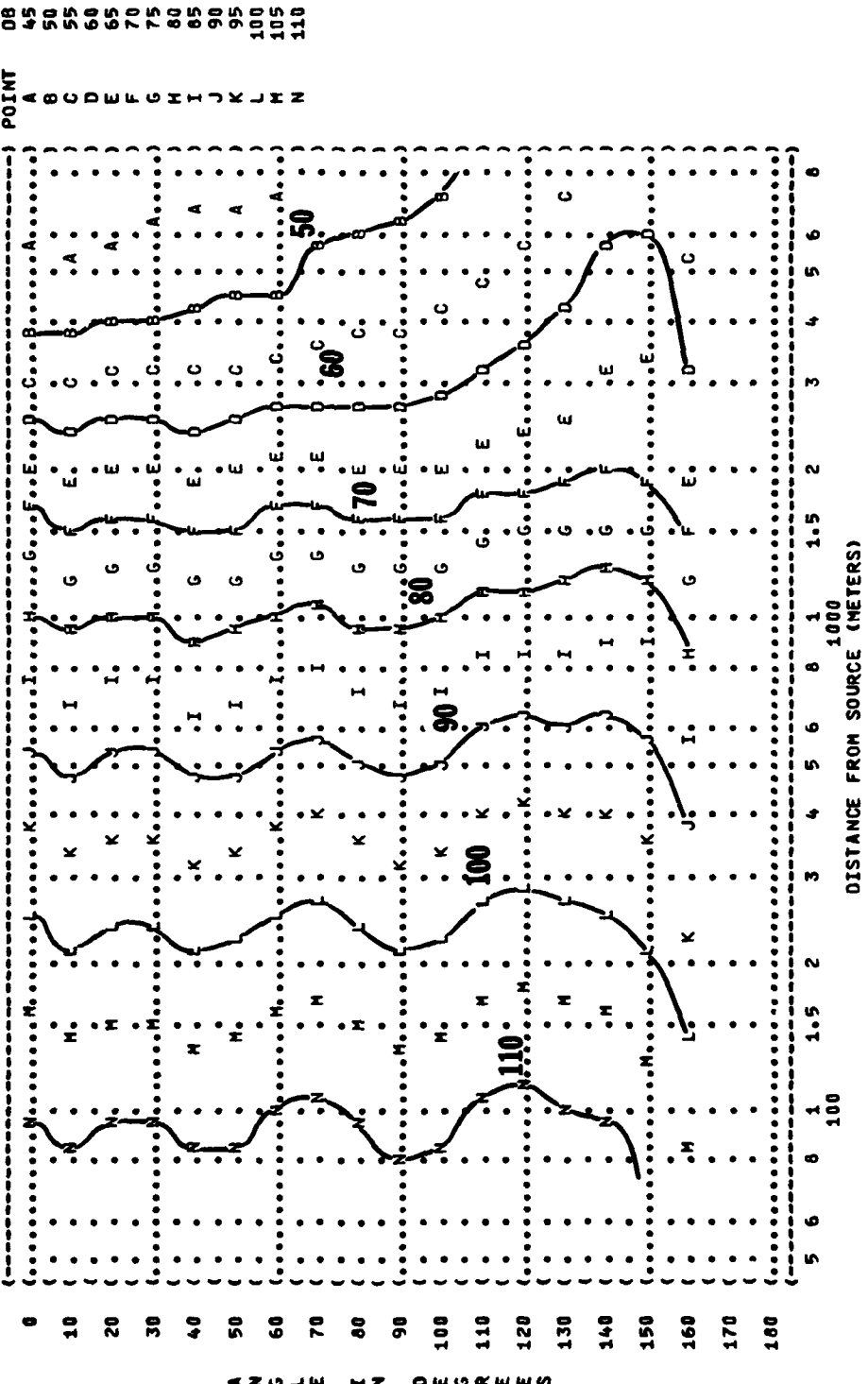
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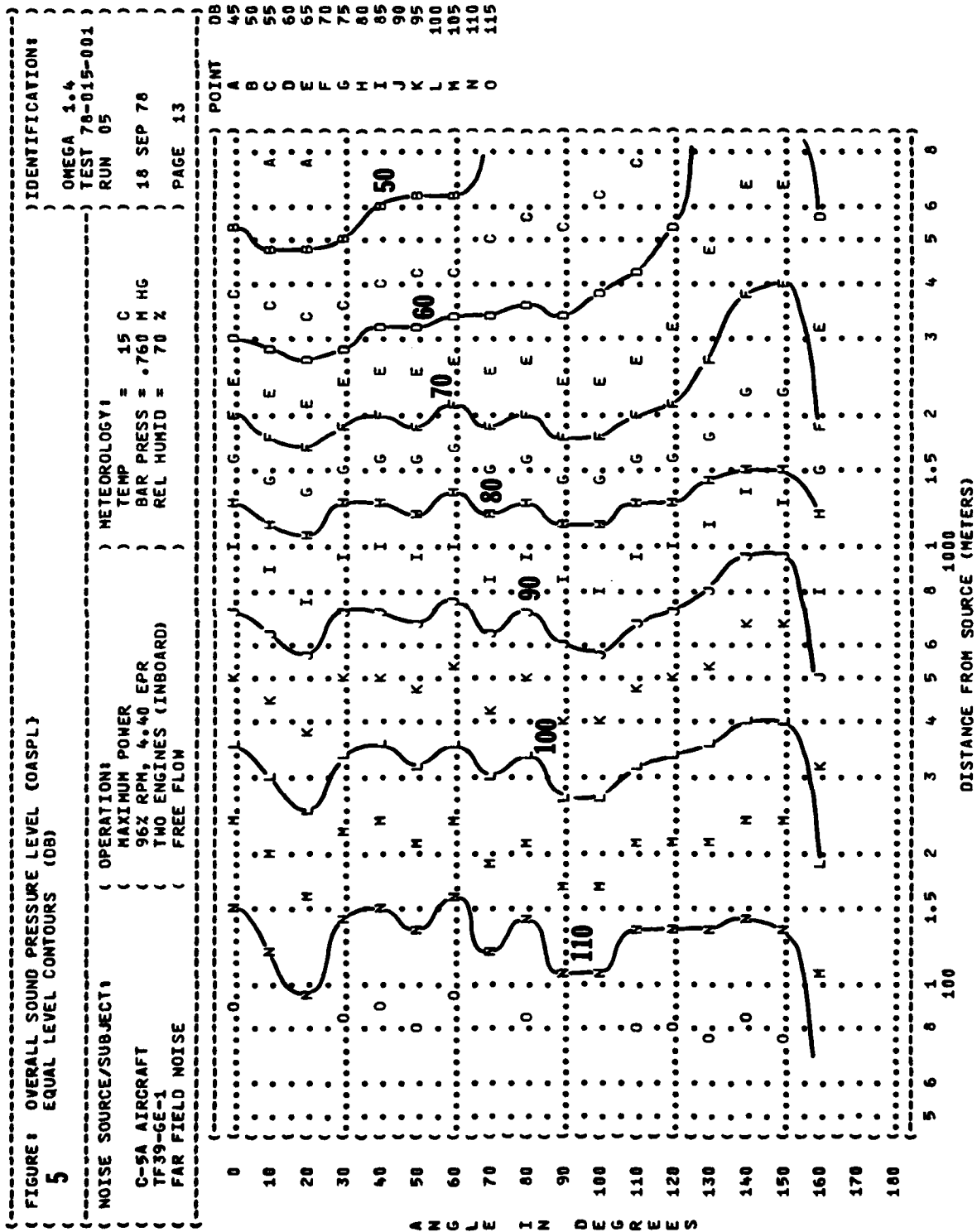
```
(-----) LESI 78-013-001 )  
NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) RUN 04 )  
(-----)
```

(C-5A AIRCRAFT)
(90% RPM, 3.5 EPR)
(BAR PRESS = .760 H HG)
(10 SEP 78)

TF39-GE-1) TWO ENGINES (INBOARD)) REL HUMID = 70 %)
EAP EYELD NOTSE) FREE FLOW) PAGE 13)

(-----) TOTAL COST \$ 0.00

[illegible]

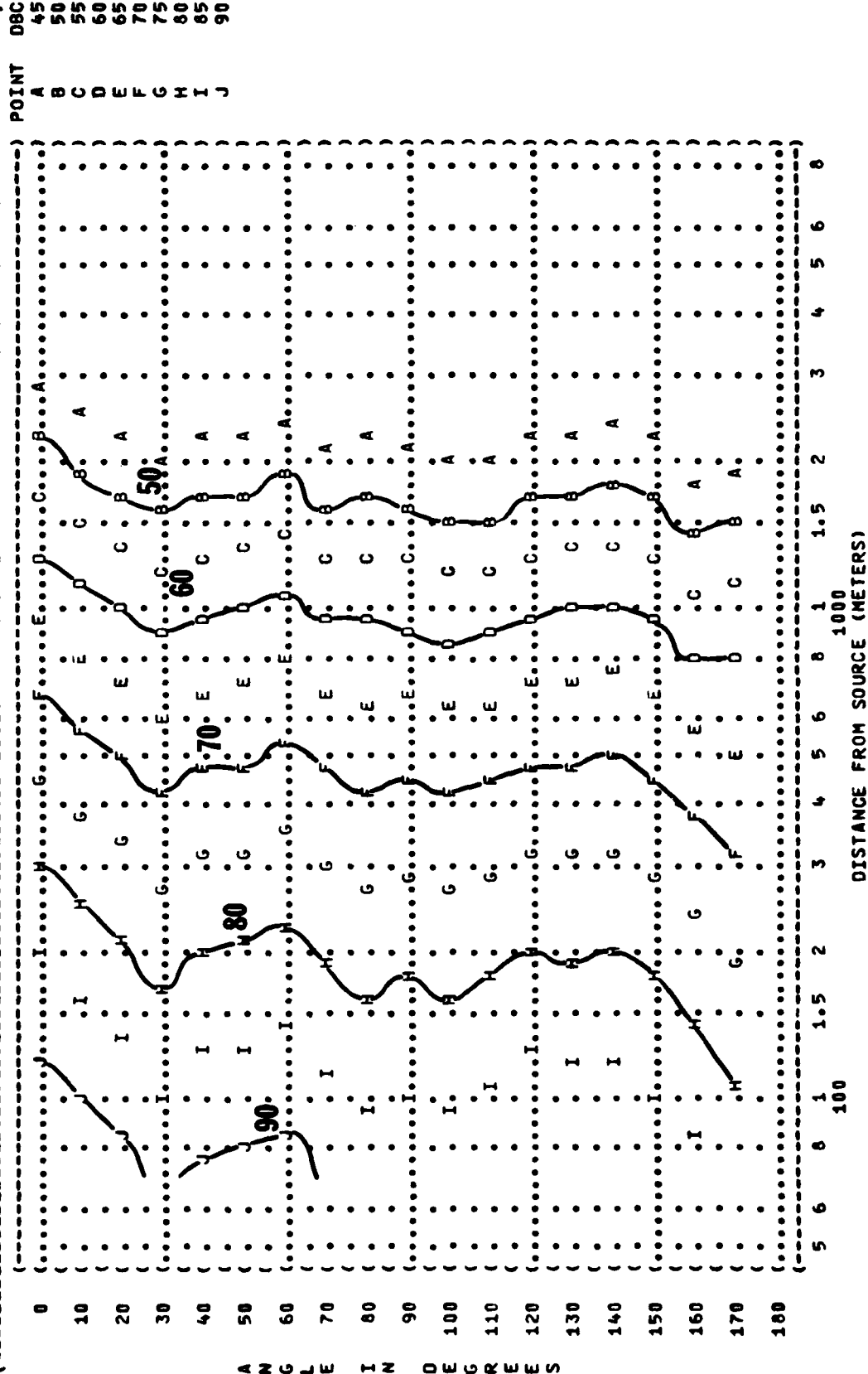


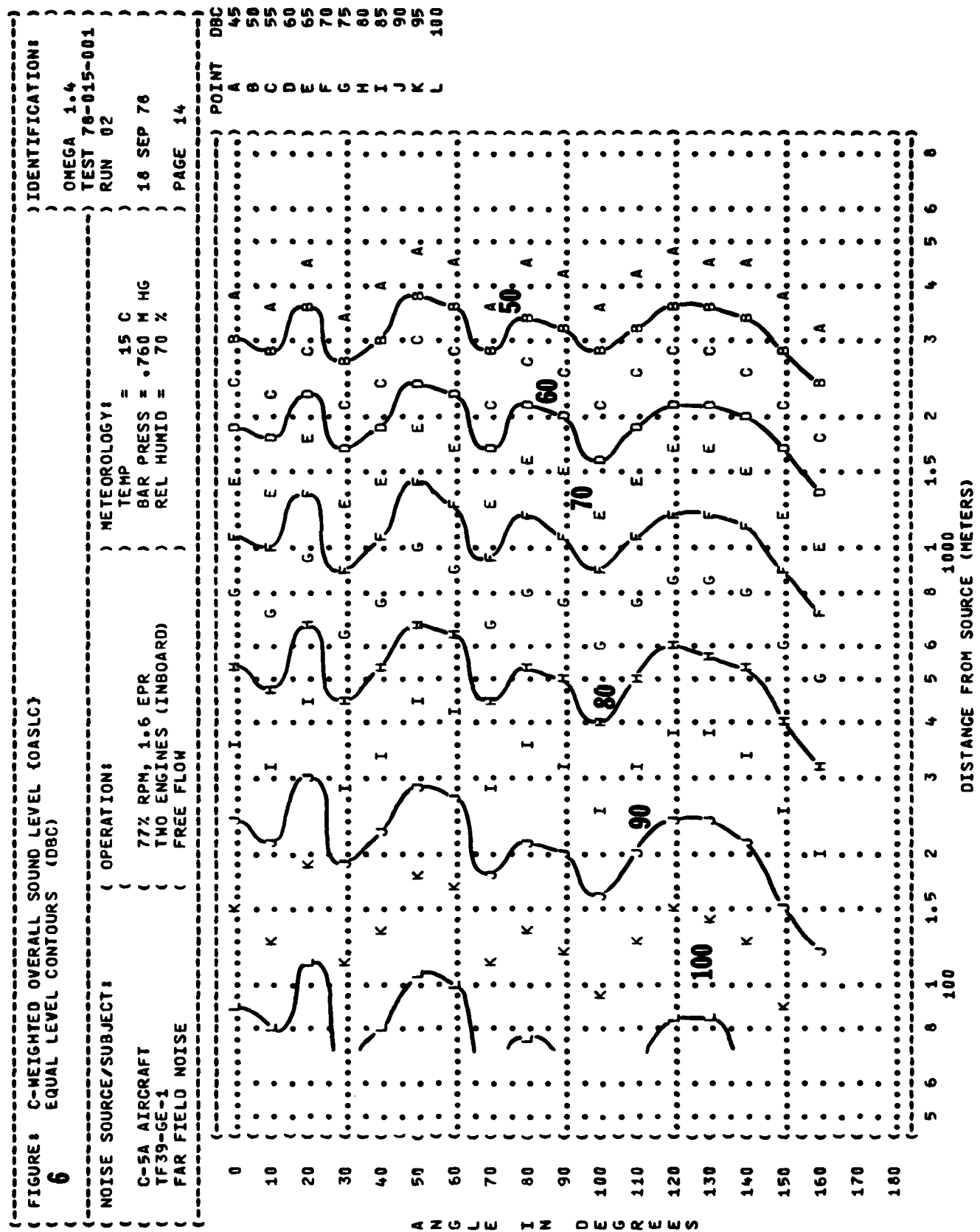
```
( FIGURE: C-WEIGHTED OVERALL SOUND LEVEL {OASLC} )
( EQUAL LEVEL CONTOURS (DBC) )
( 6 )
(-----)
( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )
( ( ( TEMP = 15 C ) )
( C-5A AIRCRAFT ( IDLE, 64% RPM ) BAR PRESS = .760 M HG )
( TF39-GE-1 ( TWO ENGINES (INBOARD) ) REL HUMID = 70 % )
( FAR FIELD NOISE ( FREE FLOW ) )
( IDENTIFICATION: )
( ) )
( OMEGA 1.4 )
( TEST 78-015-001 )
( RUN 01 )
( 18 SEP 78 )
( PAGE 14 )
```

| | | | | | | | |
|---|-----------------------|---|-----------------------|---|-----------------------|---|-----------|
| (| NOISE SOURCE/SUBJECT: | (| OPERATION: | (| METEOROLOGY: | (| RUN 01 |
| (| | (| | (| TEMP = 15 C | (| |
| (| C-5A AIRCRAFT | (| IDLE, 64% RPM | (| BAR PRESS = .760 M HG | (| 18 SEP 78 |
| (| TF39-GE-1 | (| TWO ENGINES (INBOARD) | (| REL HUMID = 70 % | (| |
| (| FAR FIELD NOISE | (| FREE FLOW | (| | (| PAGE 14 |

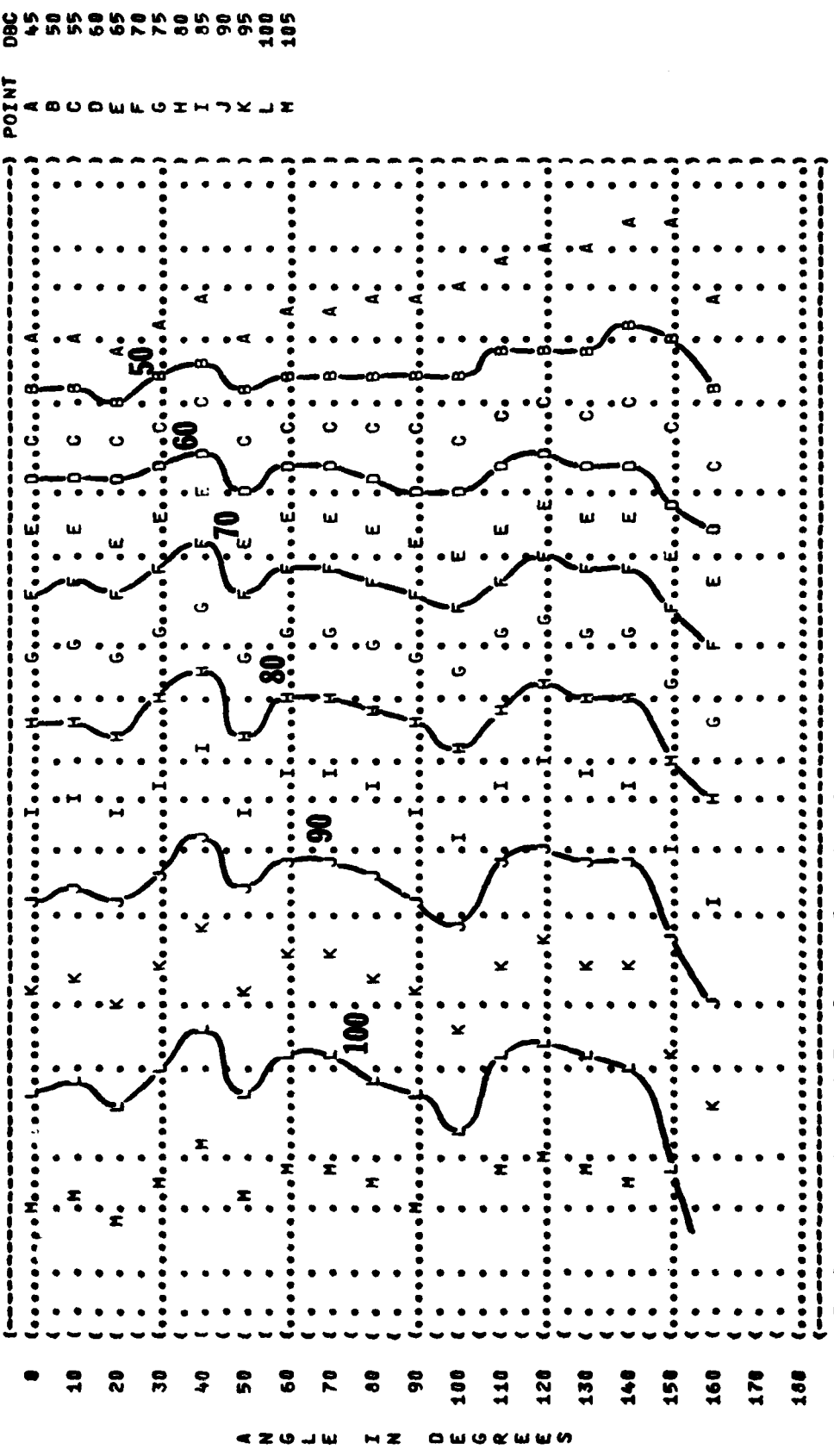
| | | | | | | | |
|---|-----------------|---|-----------------------|---|-----------------------|---|-----------|
| (| C-5A AIRCRAFT | (| IDLE, 64% RPM | (| BAR PRESS = .760 M HG |) | 18 SEP 78 |
| (| TF39-GE-1 | (| TWO ENGINES (INBOARD) | (| REL HUMID = 70 % |) | |
| (| FAR FIELD NOISE | (| FREE FLOW | (| |) | PAGE 14 |

((FAR FIELD NOISE (FREE FLOW)) PAGE 14)





IDENTIFICATIONS
 OMEGA 1.4
 TEST 78-015-001
 RUN 03
 METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %
 OPERATION:
 85% RPM, 2.5 EPR
 TWO ENGINES (INBOARD)
 FREE FLOW
 NOISE SOURCE/SUBJECT:
 C-5A AIRCRAFT
 TF39-GE-1
 FAR FIELD NOISE



POINT DBC
 A 45
 B 50
 C 55
 D 60
 E 65
 F 70
 G 75
 H 80
 I 85
 J 90
 K 95
 L 100
 M 105

DISTANCE FROM SOURCE (METERS)

DISTANCE FROM SOURCE (METERS)

IDENTIFICATION:

OMEGA 1.4

TEST 78-015-001

05 RUN

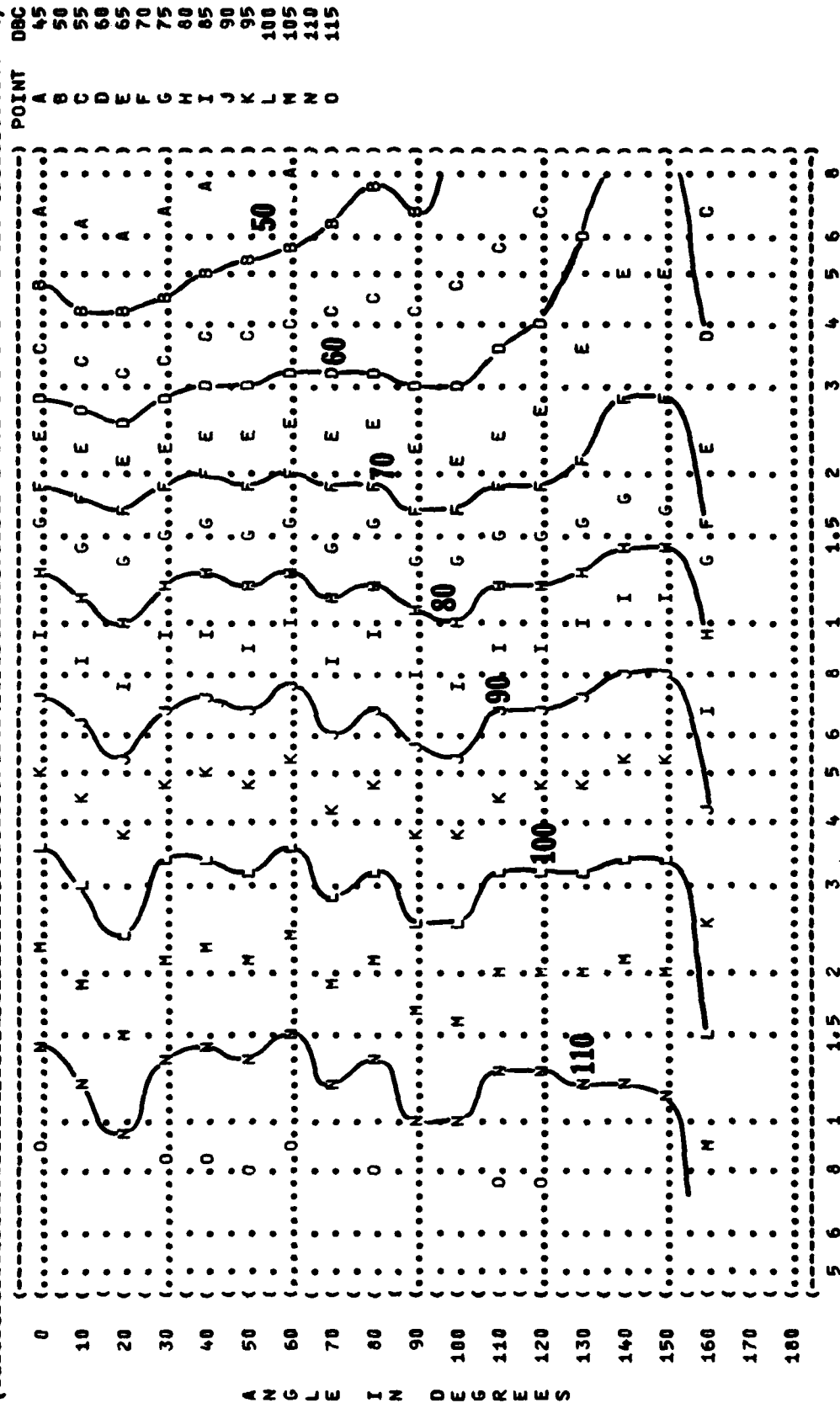
● METEOROLOGY:

TEMP = 15 C

C-5A AIRCRAFT (96% RPM. 4.40 EPR

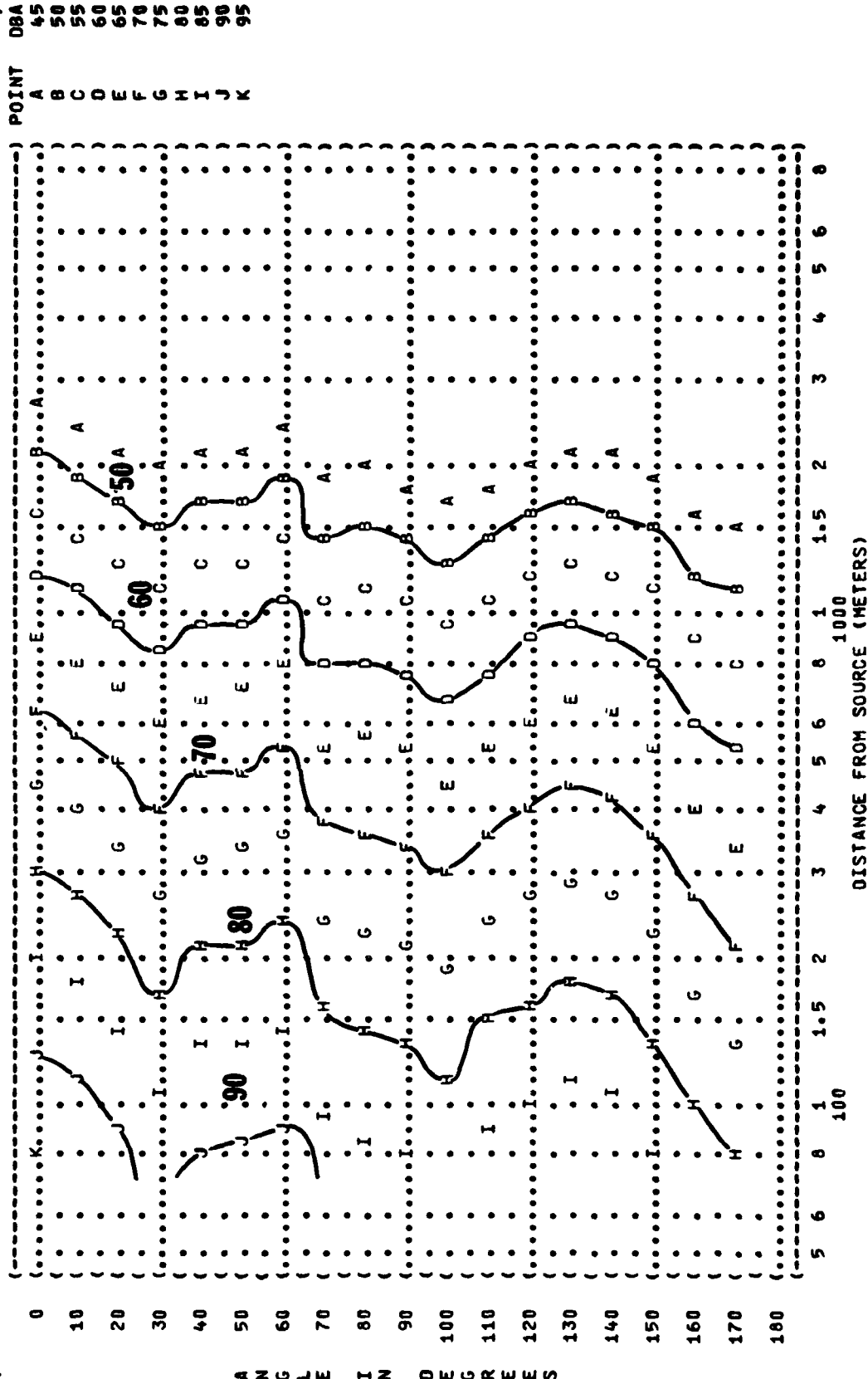
FOR KINJ 4040 CLK
TWO ENGINES (INBOARD)

FAR FIELD NOISE

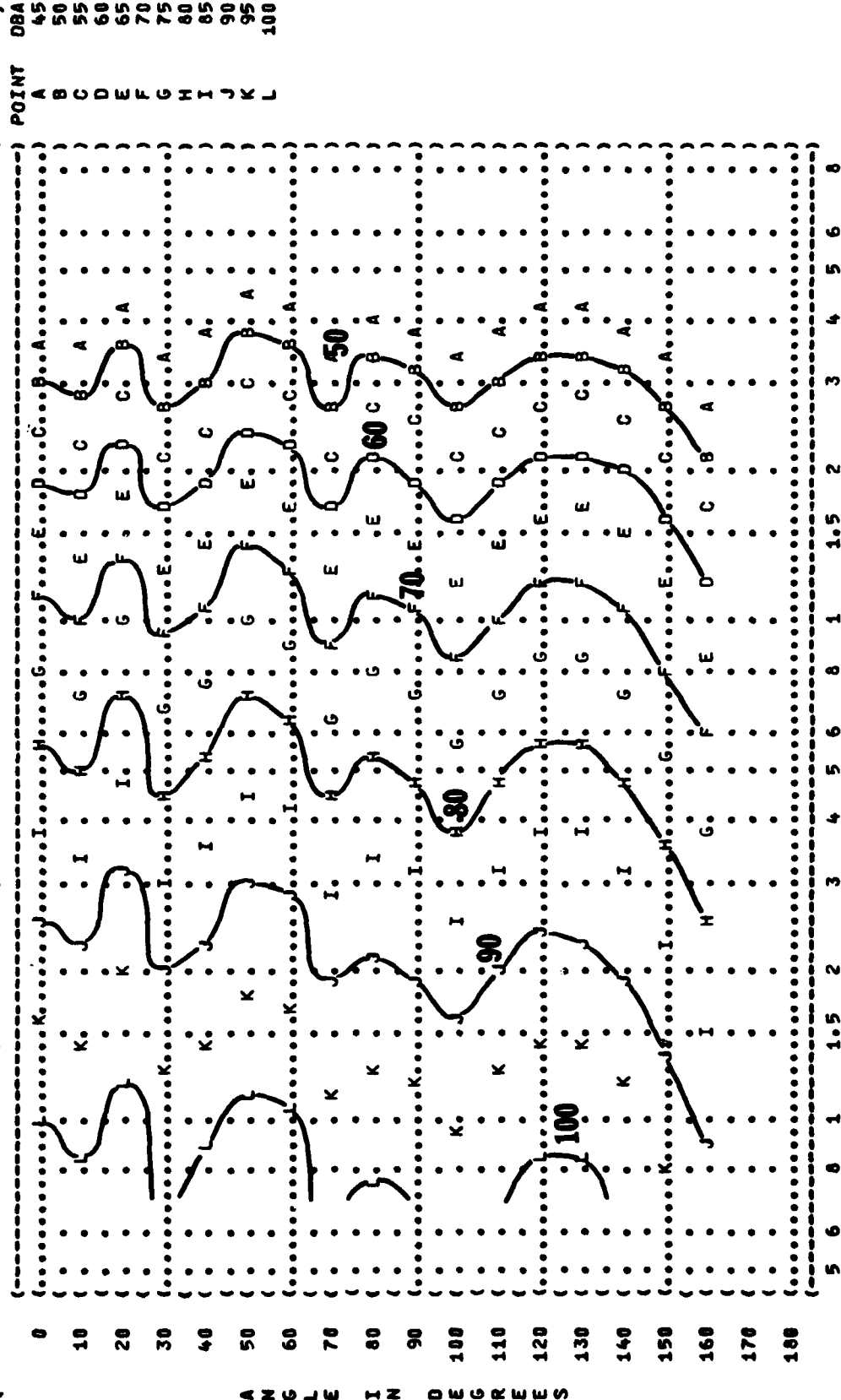


DISTANCE FROM SOURCE (METERS)

(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 (7 EQUAL LEVEL CONTOURS (DBA)
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST 78-015-001
 () NOISE SOURCE/SUBJECT: (OPERATION:
 () METEOROLOGY:
 () C-5A AIRCRAFT (IDLE, 64% RPM TEMP = 15 C
 () TF39-GE-1 (TWO ENGINES (INBOARD) BAR PRESS = .760 M HG
 () FAR FIELD NOISE (FREE FLOW REL HUMID = 70 %
 () PAGE 15



(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 (7
 (EQUAL LEVEL CONTOURS (DBA)
 () IDENTIFICATION:)
 ())
 () OMEGA 1.4
 () TEST 78-015-001
 () RUN 02
 ()
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:)
 ())
 () TEMP = 15 C
 () C-SA AIRCRAFT) 77% RPM, 1.6 EPR) BAR PRESS = .760 M HG
 () TF39-GE-1) TWO ENGINES (INBOARD)) REL HUMID = 70 %
 () FAR FIELD NOISE) FREE FLOW)
 ())
 () PAGE 15)



DISTANCE FROM SOURCE (METERS)


```
(-----)
( FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) ) IDENTIFICATION: )
( 7 EQUAL LEVEL CONTOURS (DBA) ) ) )
( ) OMEGA 1.4 )
( ) TEST 78-015-001 )
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: ) RUN 03 )
( ) ) TEMP = 15 C ) )
( C-5A AIRCRAFT ) 85% RPM, 2.5 EPR ) BAR PRESS = .760 M HG ) 24 JAN 79 )
( TF39-GE-1 ) TWO ENGINES (INBOARD) ) REL HUMID = 70 % ) )
( FAR FIELD NOISE ) FREE FLOW ) ) PAGE 15 )
(-----)
```

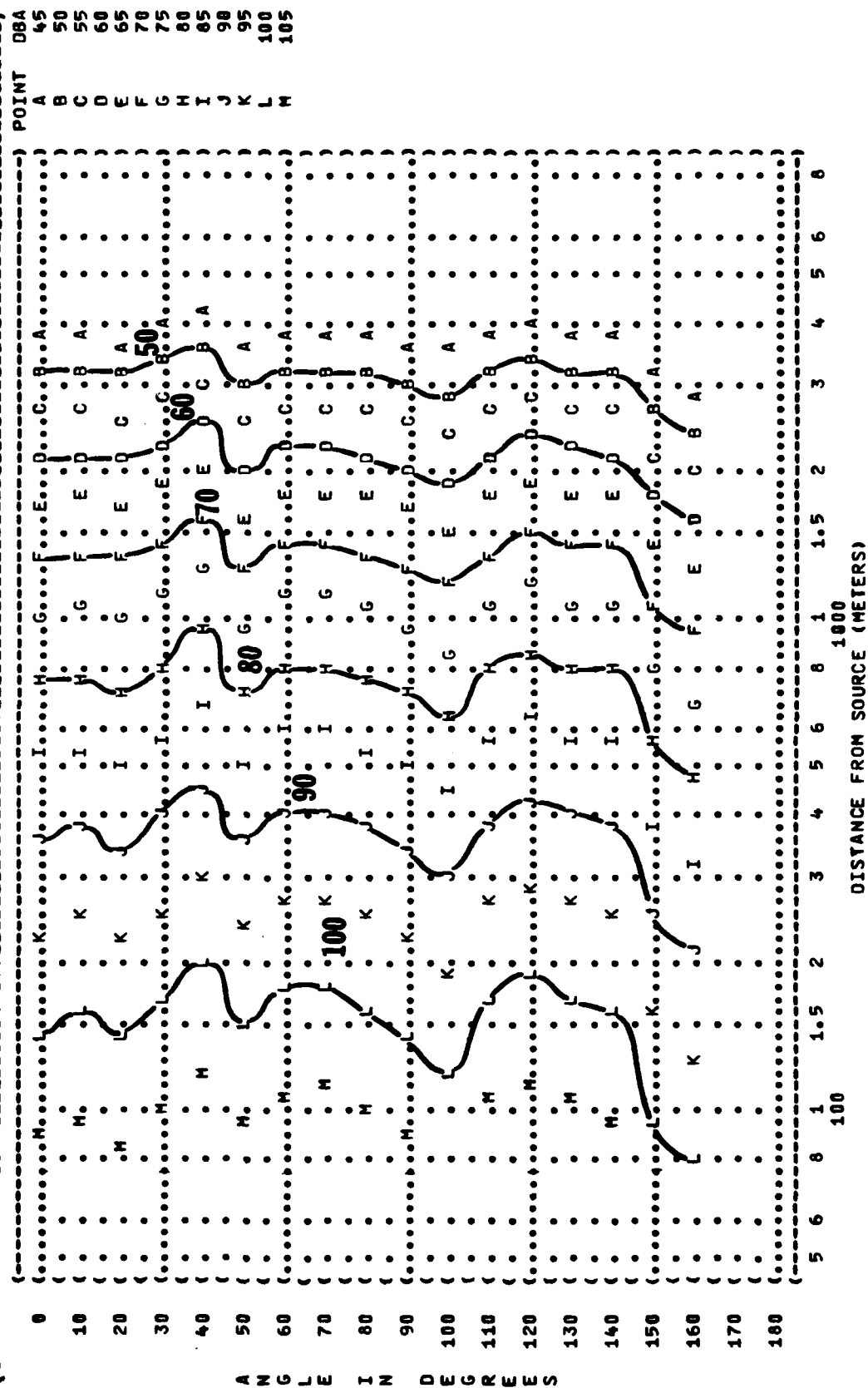
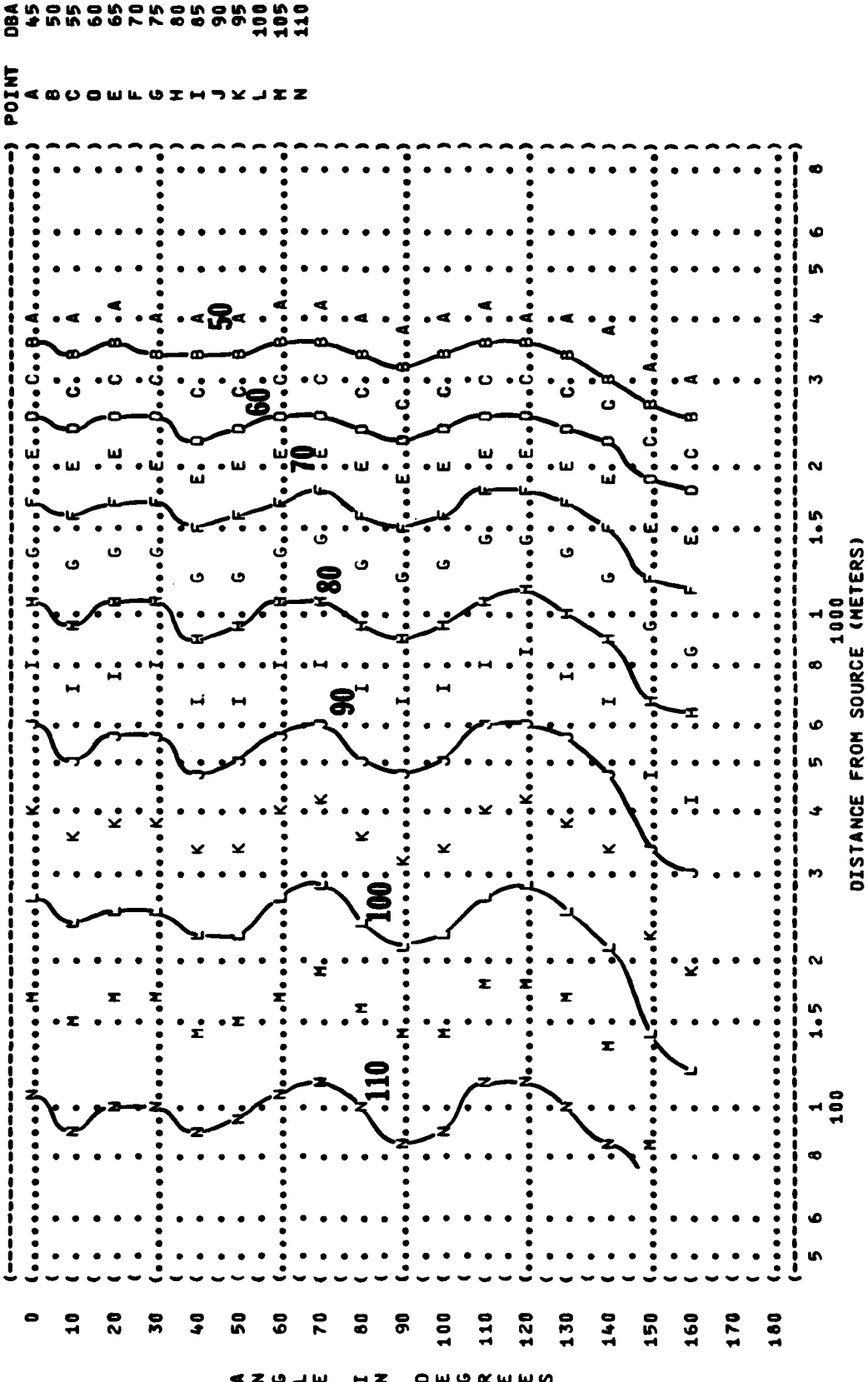
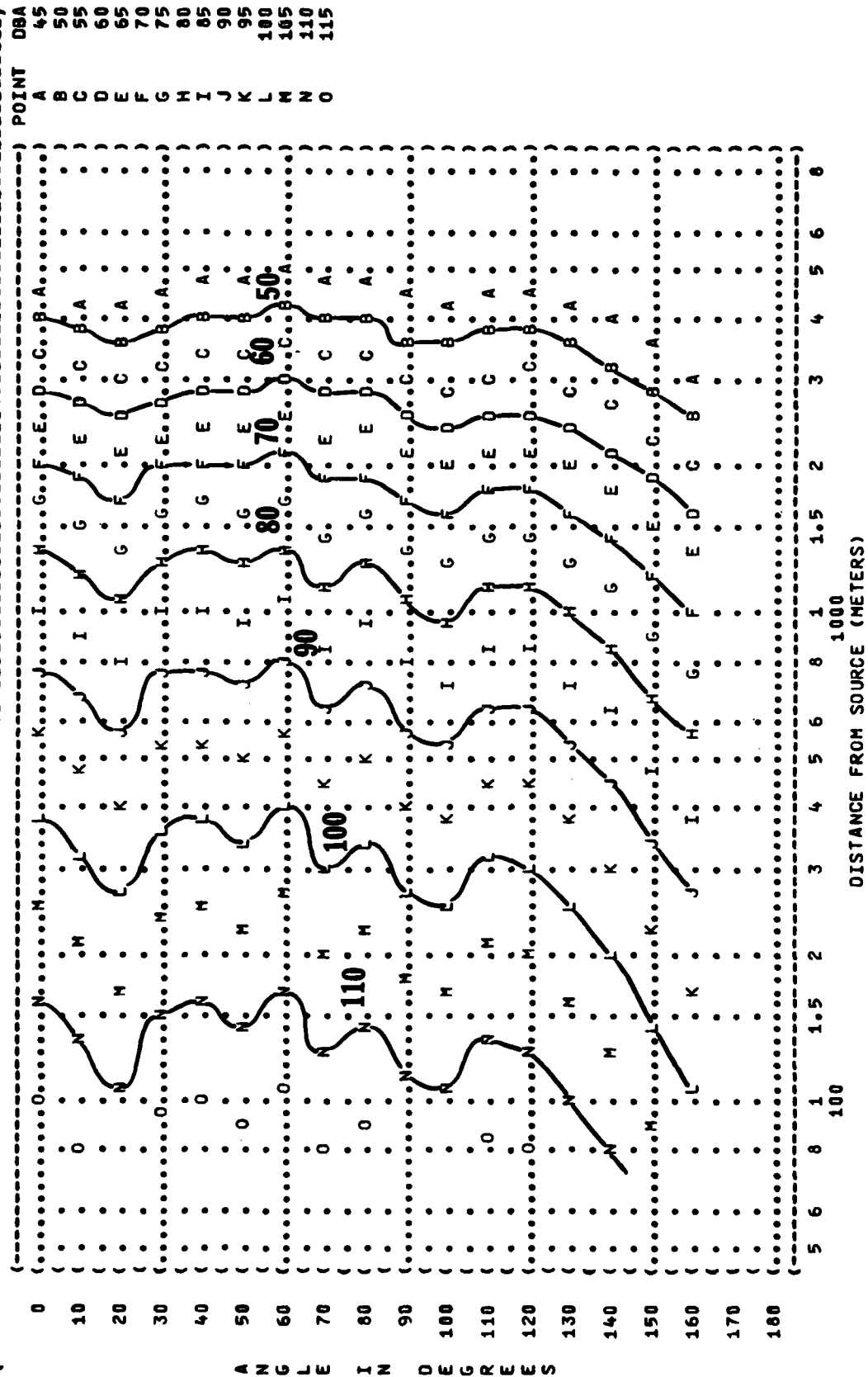


FIGURE 1 A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
7 EQUAL LEVEL CONTOURS (DBA)

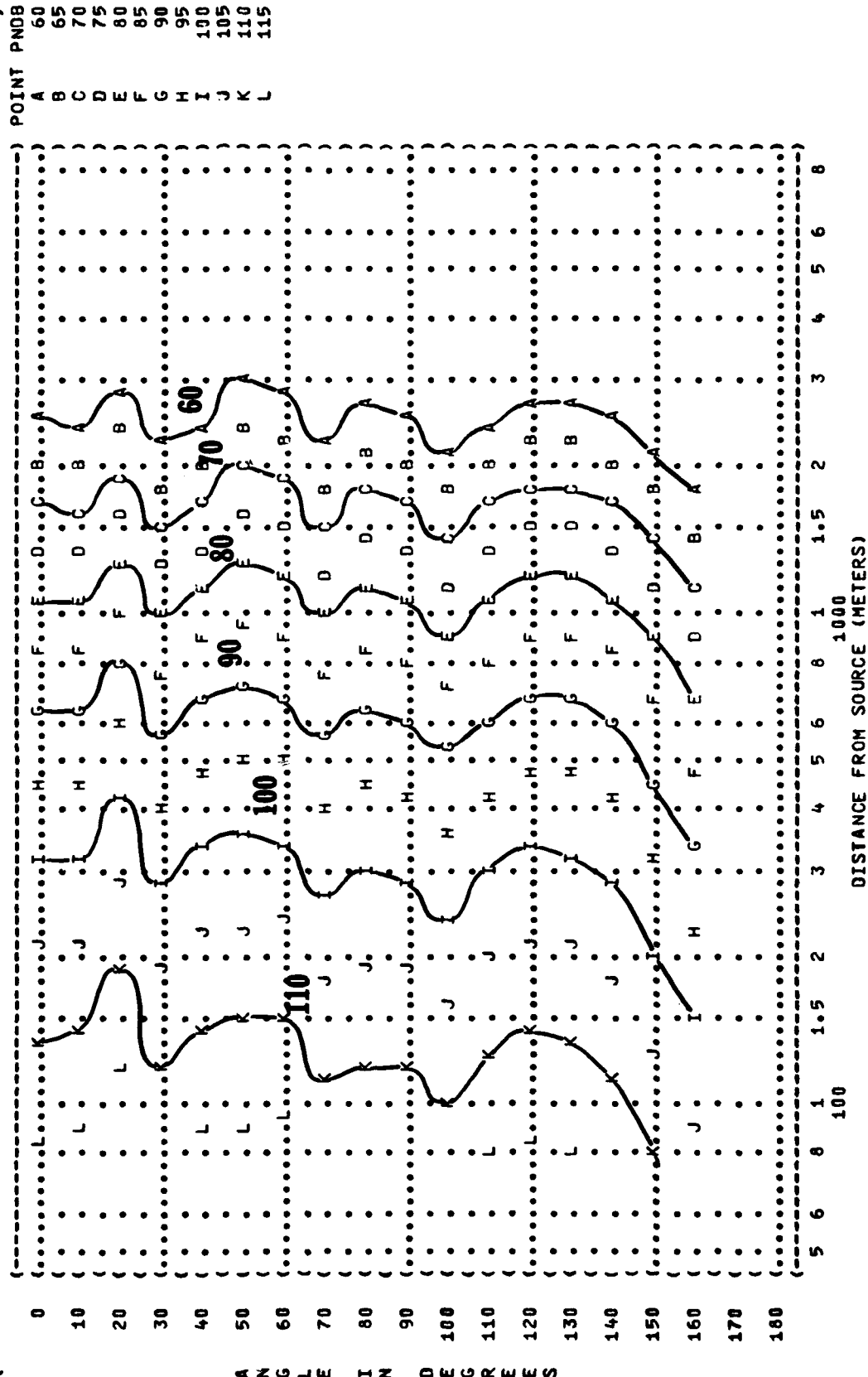
IDENTIFICATIONS:
OMEGA 1.4
TEST 78-015-001
RUN 04
18 SEP 78
PAGE 15
METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %
OPERATION:
90% RPM, 3.5 EPR
TWO ENGINES (INBOARD)
FREE FLOW
NOISE SOURCE/SUBJECT:
C-5A AIRCRAFT
TF39-GE-1
FAR FIELD NOISE



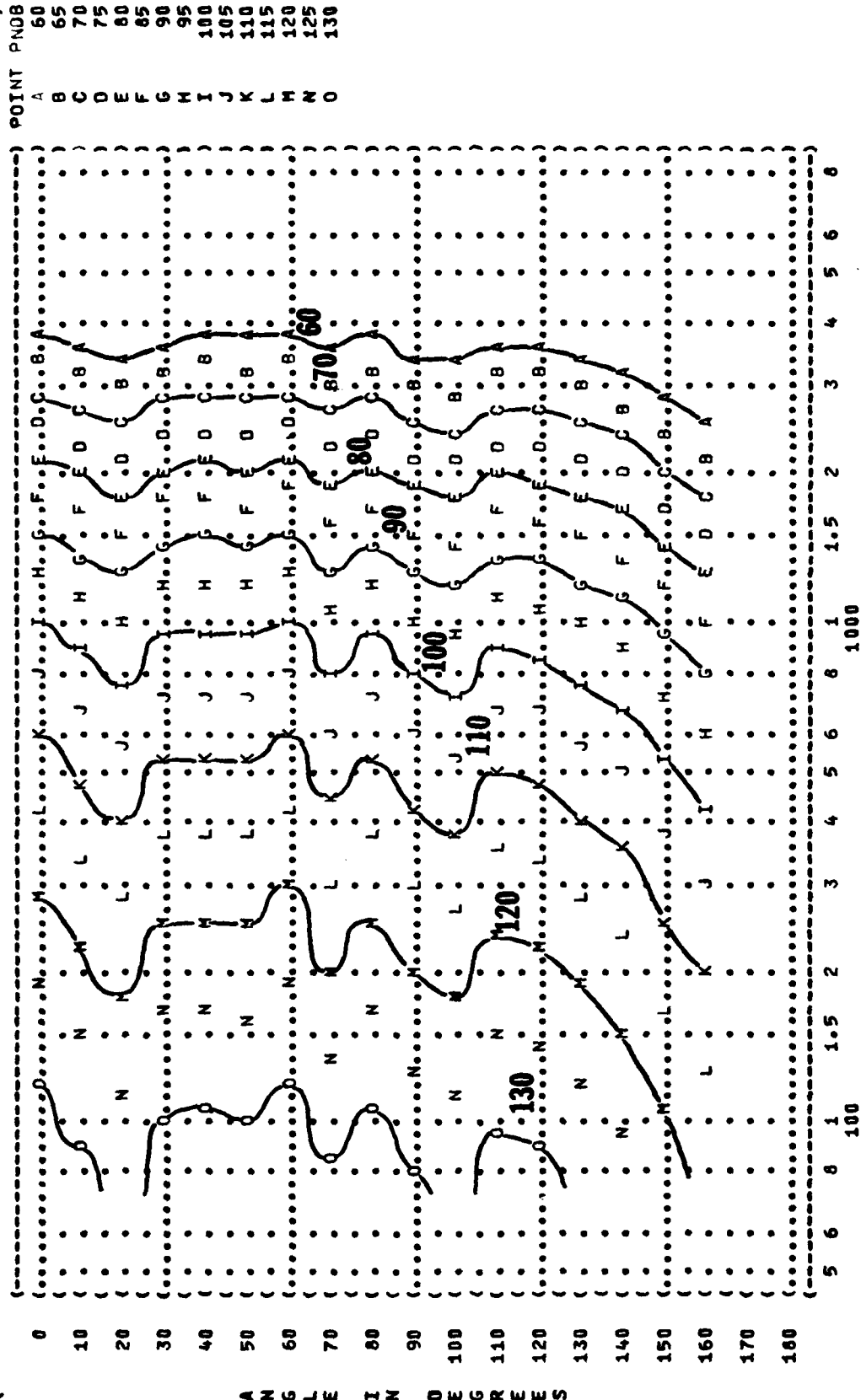
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(-----)
( FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) )
(      7      EQUAL LEVEL CONTOURS (DBA) )
( )
( ) OMEGA 1.4 )
( ) TEST 78-015-001 )
( ) RUN 05 )
( )
( ) METEOROLOGY: )
( ) TEMP = 15 C )
( ) BAR PRESS = .760 M HG )
( ) REL HUMID = 70 % )
( )
( NOISE SOURCE/SUBJECT: )
( ) OPERATION: )
( ) MAXIMUM POWER )
( ) 96% RPM, 4.4g EPR )
( ) TWO ENGINES (INBOARD) )
( ) FREE FLOW )
( )
( C-5A AIRCRAFT )
( TF39-GE-1 )
( FAR FIELD NOISE )
( ) PAGE 15 )
(-----)
```



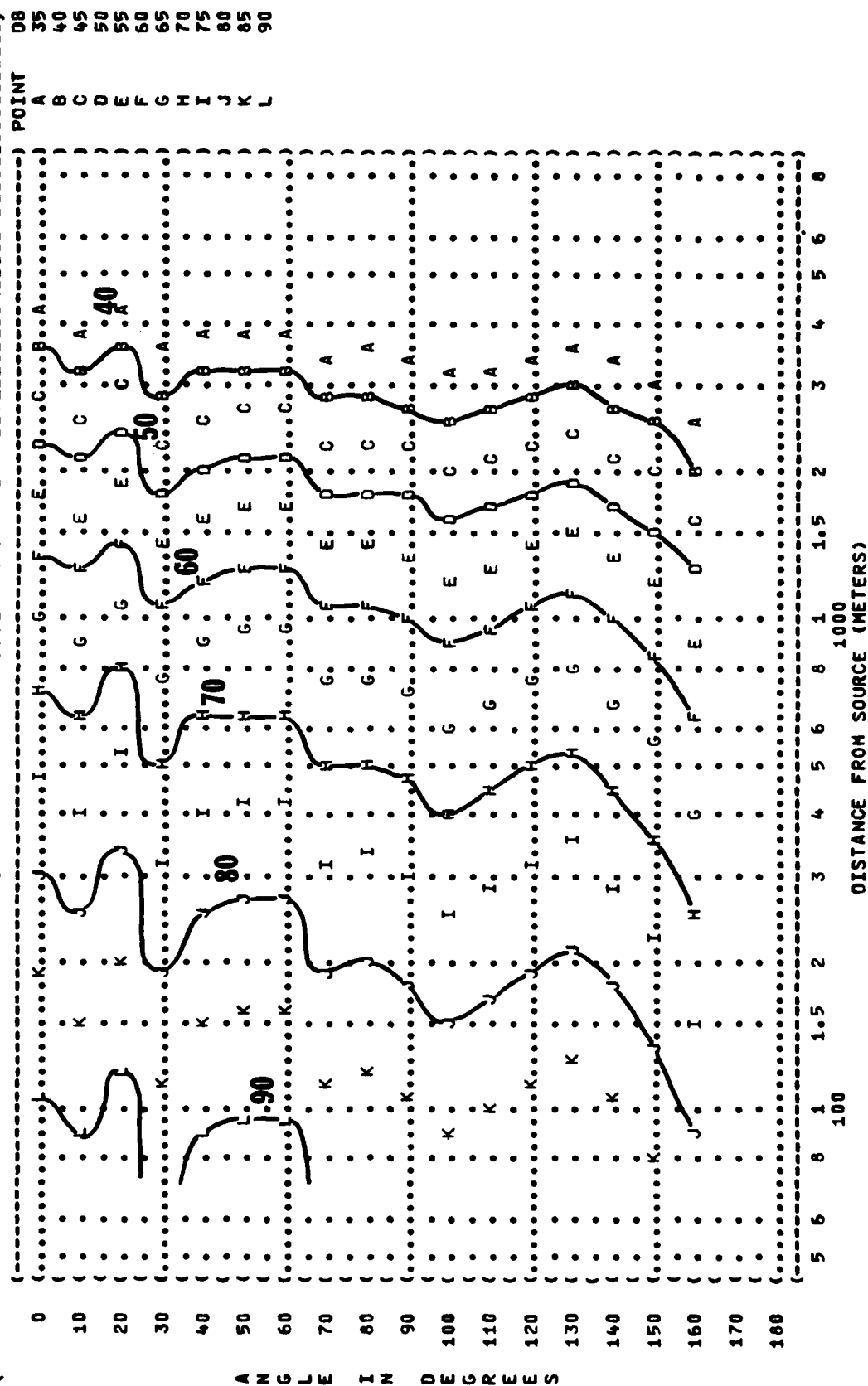

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(-----)
( FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) ) IDENTIFICATION: )
(      8 EQUAL LEVEL CONTOURS (PNDB) ) )
( ) )
( ) OMEGA 1.4 )
( ) TEST 78-015-001 )
( ) RUN 02 )
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: )
( ) ) TEMP = 15 C )
( C-5A AIPCRAFT ) 77% RPM, 1.6 EPR ) BAR PRESS = .760 M HG )
( TF39-GE-1 ) TWO ENGINES-(INBOARD) ) REL HUMID = 70 % )
( FAR FIELD NOISE ) FREE FLOW ) PAGE 16 )
(-----)
```



(FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT))
 (8)
 (NOISE SOURCE/SUBJECT:)
 (C-5A AIRCRAFT)
 (TF39-GE-1)
 (FAR FIELD NOISE)
 (OPERATION:)
 (MAXIMUM POWER)
 (96% RPM, 4.40 EPR)
 (TWO ENGINES (INBOARD))
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 78-015-001)
 (RUN 05)
 (18 SEP 78)
 (PAGE 16)




```
(-----)
( FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL {PSIL})
( EQUAL LEVEL CONTOURS (DB) )
( 9 )
( )
( ) OMEGA 1.4
( ) TEST 78-015-001
( ) RUN 02
( )
( ) METEOROLOGY:
( ) TEMP = 15 C
( ) BAR PRESS = .760 M HG
( ) REL HUMID = 70 %
( )
( NOISE SOURCE/SUBJECT: ) OPERATION:
( )
( ) 77% RPM, 1.6 EPR
( ) TWO ENGINES (INBOARD)
( ) FREE FLOW
( )
( G-5A AIRCRAFT )
( TF39-GE-1 )
( FAR FIELD NOISE )
( ) PAGE 17
(-----)
```



**PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
EQUAL LEVEL CONTOURS (DB)**

METEOROLOGY:

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

(OPERATION:

- (05% RPM, 2.5 EPR
- (TWO ENGINES (INBOARD)
- (FREE FLOW

SOURCE/SUBJECT:

AIRCRAFT
1-1
WLD NOISE

IDENTIFICATIONS

OMEGA 1.4

TEST 78-015-001
RUN 03

RUN 03

24 JAN 79

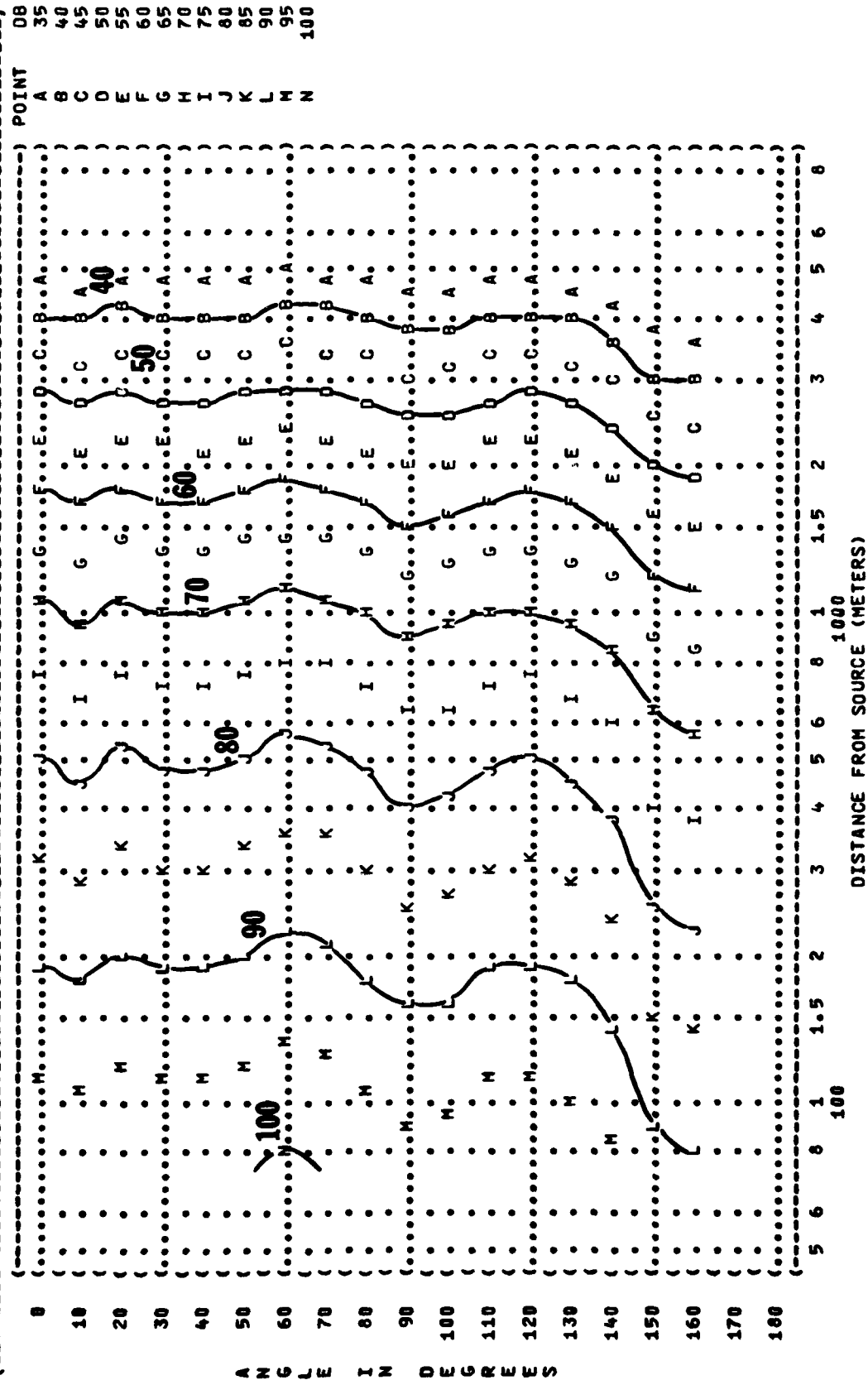
PAGE 17



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(-----)
( ( FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL {PSIL})
( ( EQUAL LEVEL CONTOURS (DB)
( (
( ( 9
(-----)
( ( NOISE SOURCE/SUBJECT:
( (
( (
( ( C-5A AIRCRAFT
( ( YF39-GE-1
( ( FAR FIELD NOISE
( (
( ( NOISE SOURCE/SUBJECT:
( ( OPERATION:
( (
( ( 90% RPM, 3.5 EPR
( ( TWO ENGINES (INBOARD)
( ( FREE FLOW
( (
( ( METEOROLOGY:
( ( TEMP = 15 C
( ( BAR PRESS = .760 M HG
( ( REL HUMID = 70 %
( (
( ( OMEGA 1.4
( ( TEST 78-015-001
( ( RUN 04
( (
( ( IDENTIFICATION:
( (
( (
( ( PAGE 17
(-----)

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IDENTIFICATION:
OMEGA 1.4
TEST 78-015-001
RUN 05
16 SEP 78
PAGE 17
```

1) METEOROLOGY:

TEMP = 15 C
BAR PRESS = .760 MM HG

TWO ENGINES (INBOARD)

FREE FLOW




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(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( ( 10 EQUAL TIME CONTOURS (MINUTES) ) ) )
(-----)
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( ( ) TEMP = 15 C ) )
( C-5A AIRCRAFT ) IDLE, 64% RPM ) BAR PRESS = .760 H MG )
( TF39-GE-1 ) TWO ENGINES (INBOARD) ) REL HUMID = 70 % )
( FAR FIELD NOISE ) FREE FLOW ) PAGE 8 )
(-----)
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PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

MINIMUM QPL EAR MUFFS
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS
COMFIT TRIPLE FLANGE EAR PLUGS
H-133 GROUND COMMUNICATION UNIT

DISTANCE FROM SOURCE (METERS)

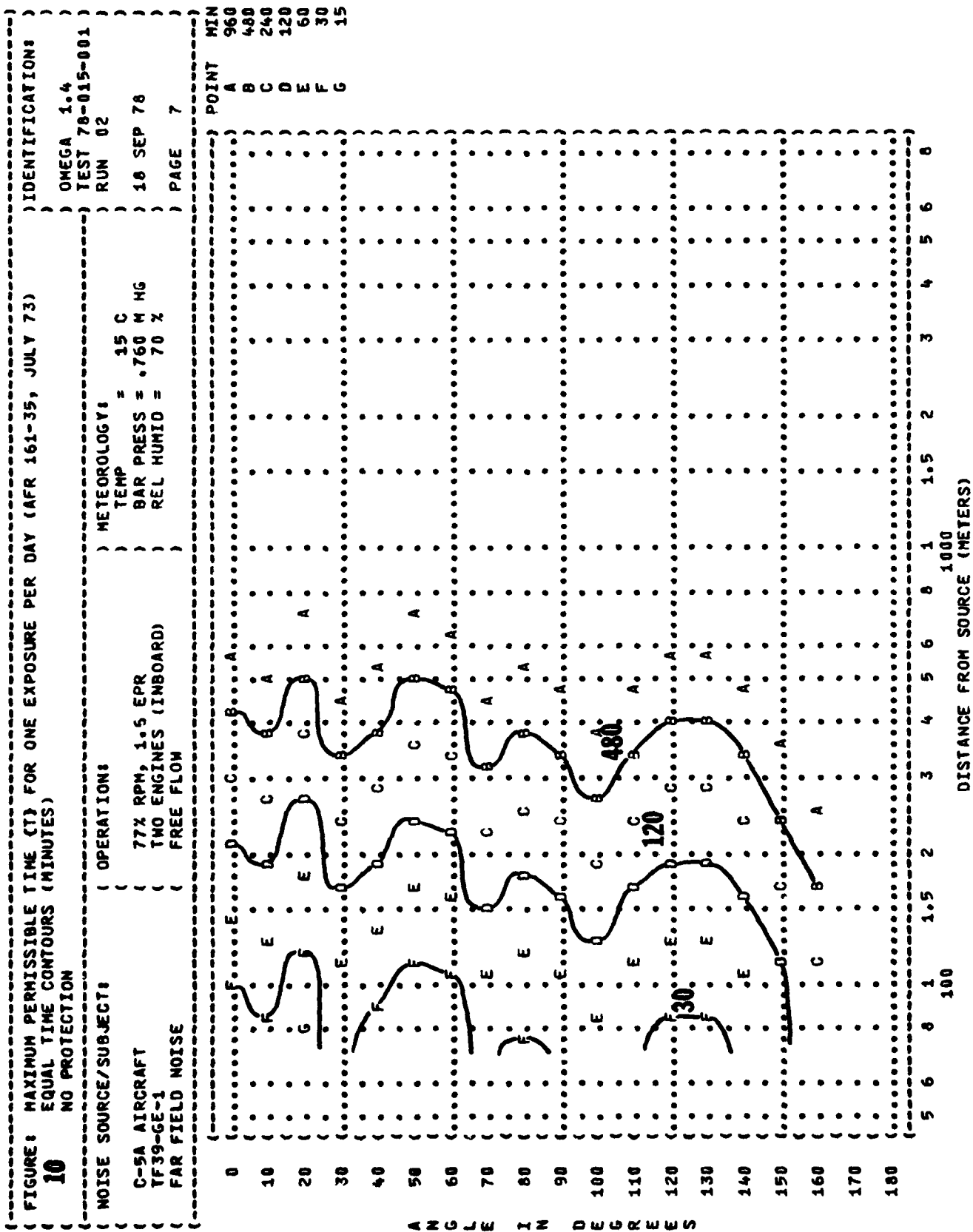
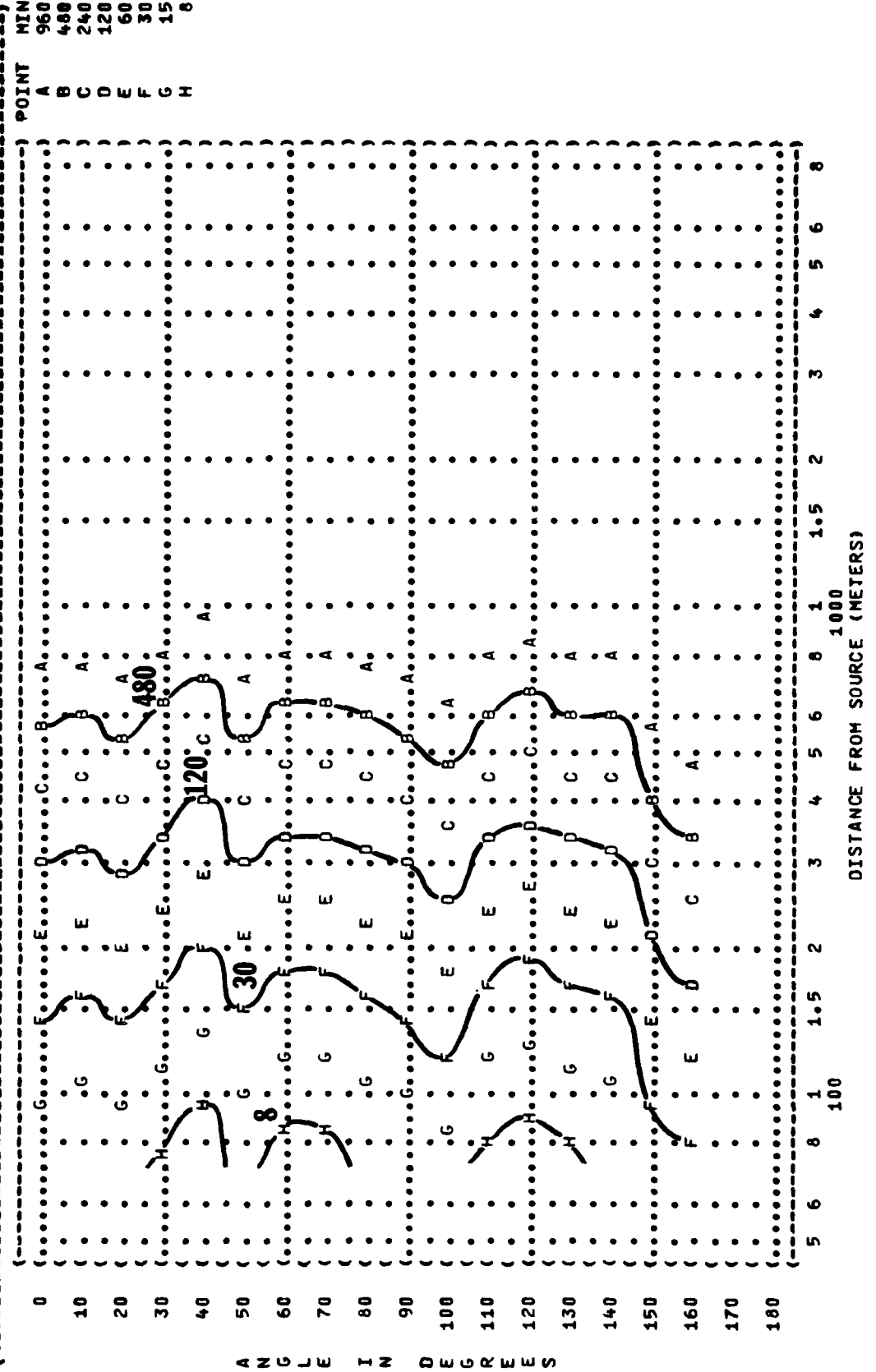


FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) IDENTIFICATION:
 10 EQUAL TIME CONTOURS (MINUTES)
 NO PROTECTION
 NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY: TEMP = 15 C
 C-5A AIFCRAFT (85% RPM, 2.5 EPR) BAR PRESS = .760 M HG
 TF39-GE-1 (TWO ENGINES (INBOARD)) REL HUMID = 70 %
 FAR FIELD NOISE (FREE FLOW)
 TEST 78-015-001
 RUN 03
 24 JAN 79
 PAGE 7



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164000 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
EQUAL TIME CONTOURS (MINUTES) ) )
MINIMUM QPL EAR MUFFS ) OMEGA 1.4 )
TEST 78-0415-004 )
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| NOISE SOURCE/SUBJECT: | OPERATION: | METEOROLOGY: | TEMP | BAR PRESS | REL HUMID | PAGE |
|-----------------------|-----------------------|--------------|------|-----------|-----------|------|
| C-9A AIRCRAFT | 85% RPM, 2.5 EPR | | 15 C | .760 M HG | | 8 |
| TF39-GE-1 | TWO ENGINES (INBOARD) | | | | 70 % | 8 |
| FAR FIELD NOISE | FREE FLOW | | | | | 8 |

(-----) POINT MIN
A 050

[illegible]

(-----)

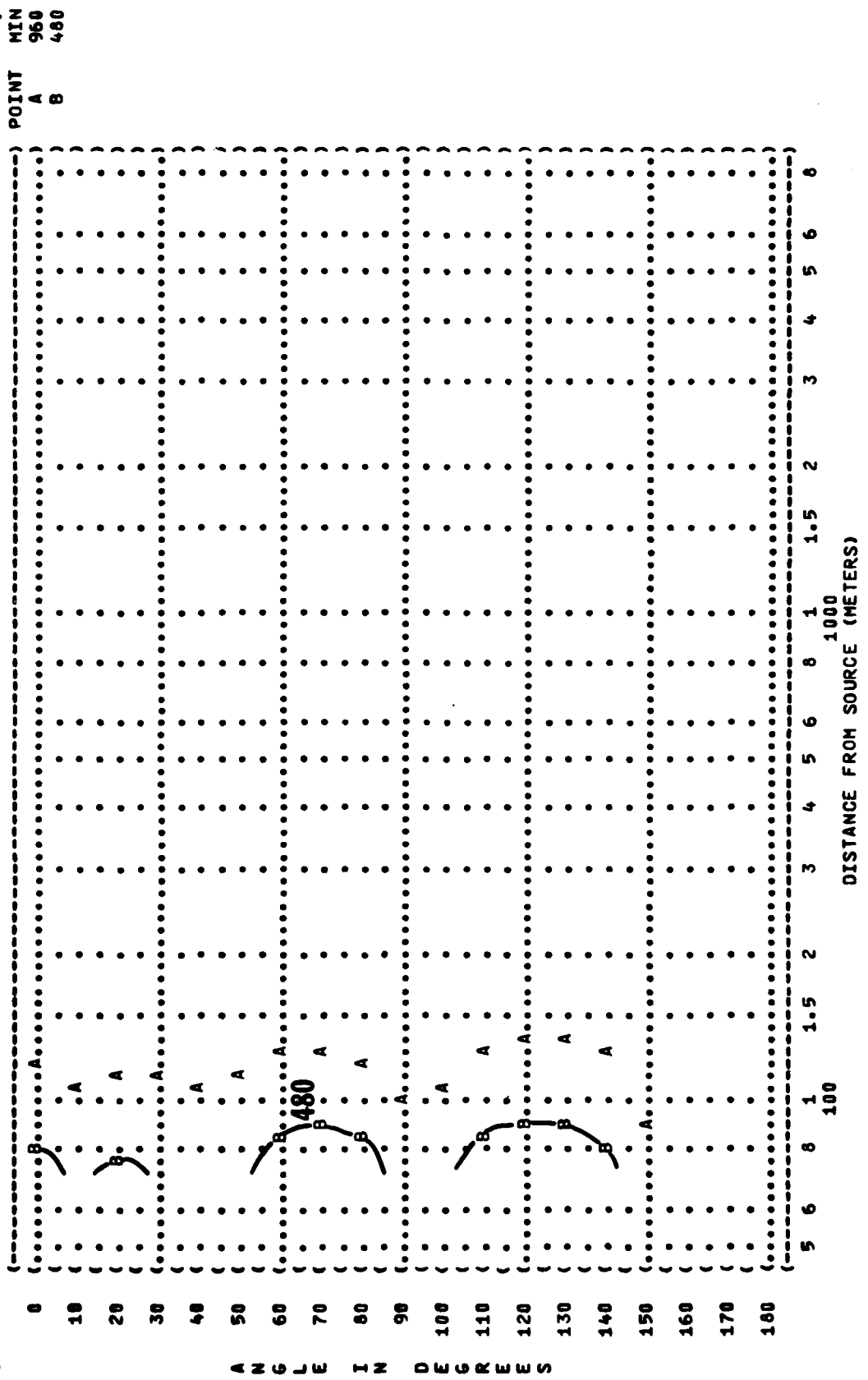
| DISTANCE FROM SOURCE (METERS) | | | | | | | | | | | | | | | | | | | |
|-------------------------------|---|---|---|-----|---|---|---|---|---|---|------|---|-----|---|---|---|---|---|---|
| 5 | 6 | 0 | 1 | 1.5 | 2 | 3 | 4 | 5 | 6 | 8 | 1000 | 1 | 1.5 | 2 | 3 | 4 | 5 | 6 | 8 |
| 100 | | | | | | | | | | | | | | | | | | | |


```
(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION:
( ( ) ) )
( 10 ) OMEGA 1.4
( ) TEST 78-015-001
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY:
( ( ) ) TEMP = 15 C
( C-5A AIRCRAFT ) 85% RPM, 2.5 EPR ) BAR PRESS = .760 M HG
( TF39-GE-1 ) TWO ENGINES (INBOARD) ) REL HUMID = 70 %
( FAR FIELD NOISE ) FREE FLOW ) PAGE 11
(-----)
```

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS

5 6 8 1 1.5 2 3 4 5 6 8 1000 100
DISTANCE FROM SOURCE (METERS)

(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 (10 EQUAL TIME CONTOURS (MINUTES)))
 (MINIMUM QPL EAR MUFFS))
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:) TEMPERATURE = 15 C)
 (C-5A AIRCRAFT))) BAR PRESS = .760 M HG)
 (TF39-GE-1))) TWO ENGINES (INBOARD))) REL HUMID = 70 %)
 (FAR FIELD NOISE))) FREE FLOW))) PAGE 8)

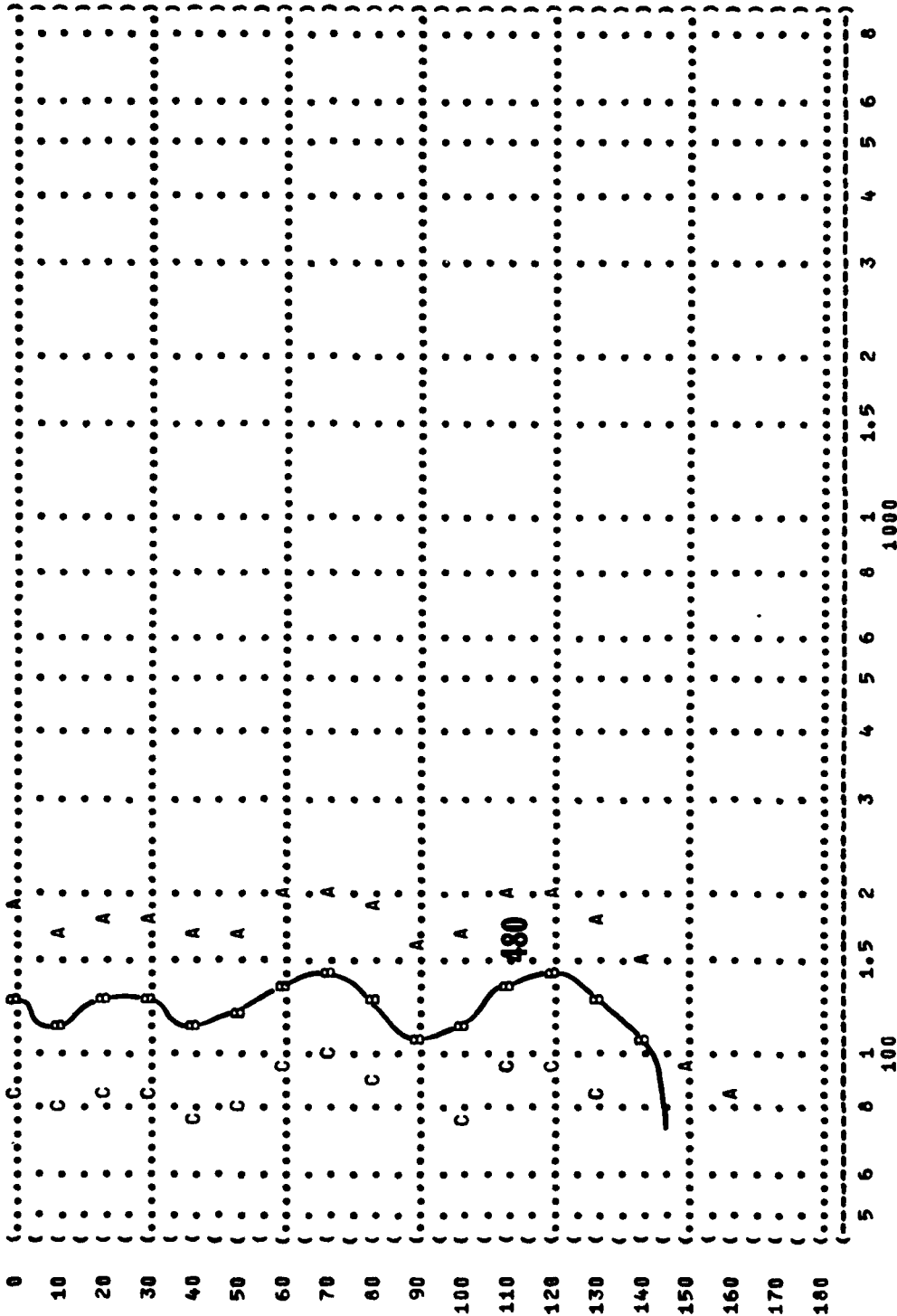


(MESSAGE SOURCE/SUBJECT:)
 (OPERATION:) METEOROLOGY:) RUN 04
 (TEMP = 15 C)
 (90% RPM, 3.5 EPR) BAR PRESS = .760 H HG) 18 SEP 78
 (TWO ENGINES (INBOARD)) REL HUMID = 70 %)
 (FREE FLOW) PAGE 10

0 (.....) A.....B.....C.....

10 (.....) A.....C.....

420 LE HZ DEUREWEN




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(-----)
( ( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( ( 10 EQUAL TIME CONTOURS (MINUTES) ) )
(-----)
( ( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: ) RUN 04 )
( ( ) ) TEMP = 15 C ) )
( ( C-5A AIRCRAFT ) 90% RPM, 3.5 EPR ) BAR PRESS = .760 M HG ) 10 SEP 78 )
( ( TF39-GE-1 ) TWO ENGINES (INBOARD) ) REL HUMID = 70 % ) )
( ( FAR FIELD NOISE ) FREE FLOW ) ) PAGE 12 )
(-----)

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| ANGLE IN DEGREES | 0° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° | 100° | 110° | 120° | 130° | 140° | 150° | 160° | 170° | 180° |
|------------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 0.0000 | 0.1736 | 0.3420 | 0.5000 | 0.6428 | 0.7660 | 0.8660 | 0.9397 | 0.9848 | 1.0000 | 0.9848 | 0.9397 | 0.8660 | 0.7660 | 0.6428 | 0.5000 | 0.3420 | 0.1736 | 0.0000 |
| 2 | 0.0000 | 0.3420 | 0.6913 | 1.0397 | 1.3763 | 1.6913 | 1.9848 | 2.2598 | 2.5119 | 2.7397 | 2.9413 | 3.1163 | 3.2619 | 3.3869 | 3.4913 | 3.5763 | 3.6413 | 3.6869 | 3.7119 |
| 3 | 0.0000 | 0.6913 | 1.3763 | 2.0713 | 2.7397 | 3.3869 | 4.0119 | 4.6119 | 5.1869 | 5.7397 | 6.2619 | 6.7513 | 7.2069 | 7.6269 | 8.0113 | 8.3613 | 8.6763 | 8.9513 | 9.1869 |
| 4 | 0.0000 | 1.0397 | 2.0713 | 3.1163 | 4.1869 | 5.2619 | 6.3413 | 7.4119 | 8.4669 | 9.5069 | 10.5269 | 11.5163 | 12.4763 | 13.4069 | 14.3069 | 15.1763 | 16.0113 | 16.8113 | 17.5763 |
| 5 | 0.0000 | 1.3763 | 2.7397 | 4.1869 | 5.6119 | 7.0119 | 8.3869 | 9.7397 | 11.0669 | 12.3669 | 13.6397 | 14.8763 | 16.0763 | 17.2397 | 18.3669 | 19.4569 | 20.5069 | 21.5163 | 22.4869 |
| 6 | 0.0000 | 1.6913 | 3.3869 | 5.1869 | 6.9413 | 8.6669 | 10.3669 | 12.0397 | 13.6763 | 15.2763 | 16.8413 | 18.3669 | 19.8469 | 21.2763 | 22.6569 | 24.0069 | 25.3163 | 26.5869 | 27.8163 |
| 7 | 0.0000 | 1.9848 | 4.0119 | 6.3413 | 8.6669 | 10.9848 | 12.7869 | 14.5569 | 16.2869 | 17.9763 | 19.6263 | 21.2369 | 22.8069 | 24.3369 | 25.8263 | 27.2763 | 28.6869 | 30.0569 | 31.3869 |
| 8 | 0.0000 | 2.2598 | 4.6119 | 7.4119 | 10.3669 | 12.7869 | 15.1869 | 17.5569 | 19.8869 | 22.1763 | 24.4263 | 26.6369 | 28.8069 | 30.9369 | 32.9369 | 34.9069 | 36.8369 | 38.7263 | 40.5763 |
| 9 | 0.0000 | 2.5119 | 5.1869 | 8.4669 | 11.9869 | 14.5569 | 17.1869 | 19.7763 | 22.3263 | 24.8369 | 27.3069 | 29.7369 | 32.1263 | 34.4763 | 36.7869 | 39.0569 | 41.2869 | 43.4763 | 45.6263 |
| 10 | 0.0000 | 2.7397 | 5.7397 | 9.5069 | 13.1869 | 16.2869 | 19.0369 | 21.8369 | 24.5869 | 27.2869 | 29.9369 | 32.5369 | 35.0869 | 37.5869 | 40.0369 | 42.4369 | 44.7869 | 47.0869 | 49.3369 |
| 11 | 0.0000 | 2.9413 | 6.2619 | 10.5269 | 14.3869 | 17.7869 | 20.8369 | 23.8869 | 26.9369 | 29.9869 | 32.9369 | 35.8869 | 38.7869 | 41.6369 | 44.4369 | 47.1869 | 49.8869 | 52.5369 | 55.1369 |
| 12 | 0.0000 | 3.1163 | 6.7513 | 11.5163 | 15.5869 | 19.0369 | 22.3869 | 25.8369 | 29.2869 | 32.7369 | 36.1869 | 39.5869 | 42.9369 | 46.2369 | 49.4869 | 52.6869 | 55.8369 | 58.9369 | 61.9869 |
| 13 | 0.0000 | 3.2619 | 7.2069 | 12.4763 | 16.7869 | 20.3869 | 24.0369 | 27.7869 | 31.5369 | 35.2869 | 39.0369 | 42.7369 | 46.3869 | 50.0369 | 53.6869 | 57.2869 | 60.8369 | 64.3369 | 67.7869 |
| 14 | 0.0000 | 3.3869 | 7.6269 | 13.4069 | 17.9869 | 21.6869 | 25.6369 | 29.6869 | 33.8369 | 37.9869 | 42.1369 | 46.2869 | 50.3869 | 54.4369 | 58.4869 | 62.4869 | 66.4369 | 70.3369 | 74.1869 |
| 15 | 0.0000 | 3.4913 | 8.0113 | 14.3069 | 19.1869 | 23.0369 | 27.1869 | 31.5369 | 35.9869 | 40.4369 | 44.8869 | 49.3369 | 53.7869 | 58.1869 | 62.5369 | 66.8369 | 71.0869 | 75.2369 | 79.3369 |
| 16 | 0.0000 | 3.5763 | 8.3613 | 15.1763 | 20.3869 | | | | | | | | | | | | | | |

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:
AMERICAN OPTICAL 1700 EAR MUFFS

5 6 8 1 1.5 2 3 4 5 6 8
100 1000
DISTANCE FROM SOURCE (METERS)

FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

IDENTIFICATION:

10 NO PROTECTION

NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:)

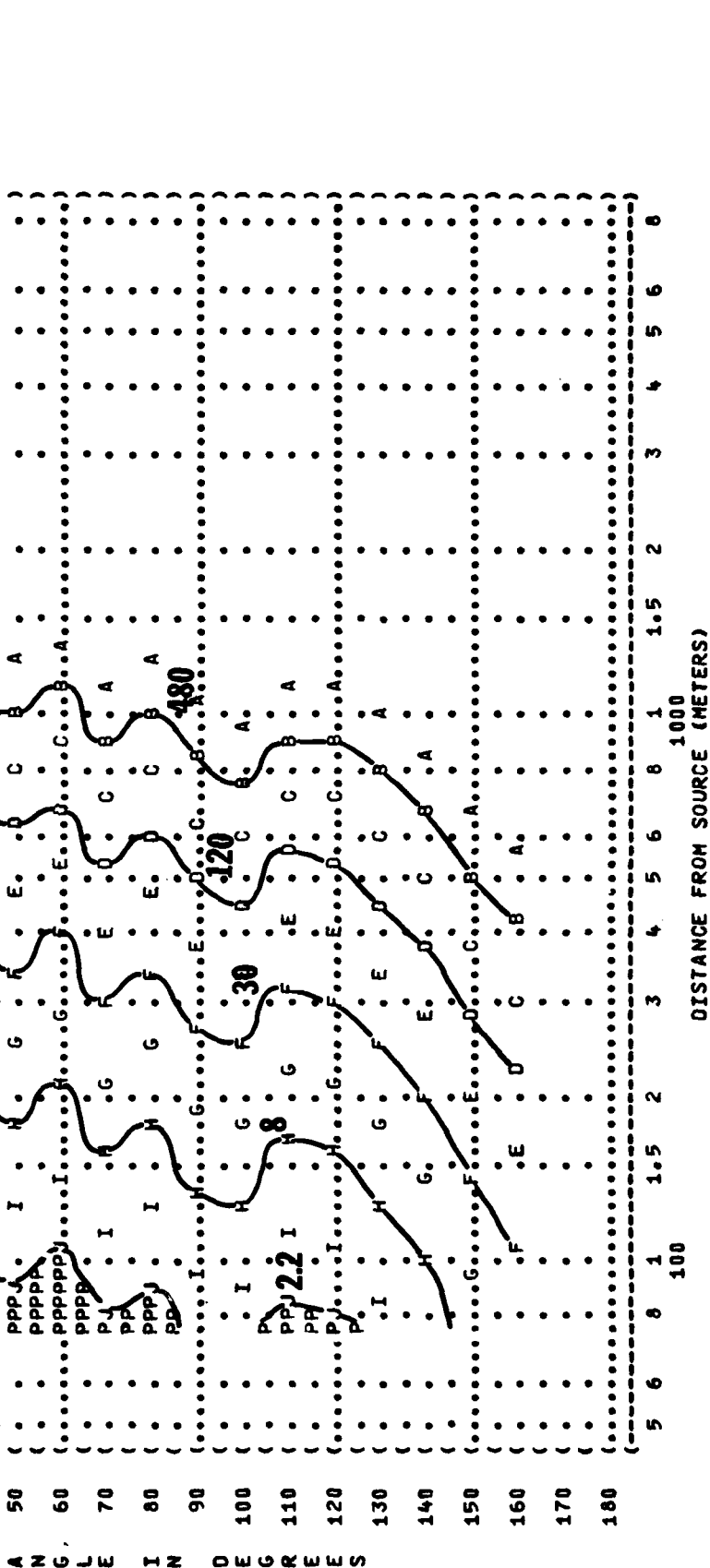
C-5A AIRCRAFT (MAXIMUM POWER) TEMP = 15 C)

TF39-GE-1 (96% RPM, 4.40 EPR) BAR PRESS = .760 M HG)

FAR FIELD NOISE (TWO ENGINES (INBOARD)) REL HUMID = 70 %)

(FREE FLOW))

PAGE 7




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(-----)
( ( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( ( EQUAL TIME CONTOURS (MINUTES) ) ) )
( ( MINIMUM QPL EAR MUFFS ) OMEGA 1.4 )
( ( NOISE SOURCE/SUBJECT: ) TEST 78-015-001 )
( ( OPERATION: ) METEOROLOGY: ) RUN 05 )
( ( MAXIMUM POWER ) TEMP = 15 C ) )
( ( 96% RPM, 4.40 EPR ) BAR PRESS = .760 M HG ) 10 SEP 78 )
( ( TWO ENGINES (INBOARD) ) REL HUMID = 70 % ) )
( ( FREE FLOW ) ) PAGE 8 )
(-----)
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| MIN | POINT | | DISTANCE FROM SOURCE (METERS) |
|-----|-------|---|-------------------------------|
| | A | B | |
| 960 | | | |
| 480 | | | |
| 240 | | | |
| 0 | | | |
| 10 | | | |
| 20 | | | |
| 30 | | | |
| 40 | | | |
| 50 | | | |
| 60 | | | |
| 70 | | | |
| 80 | | | |
| 90 | | | |
| 100 | | | |
| 110 | | | |
| 120 | | | |
| 130 | | | |
| 140 | | | |
| 150 | | | |
| 160 | | | |
| 170 | | | |
| 180 | | | |